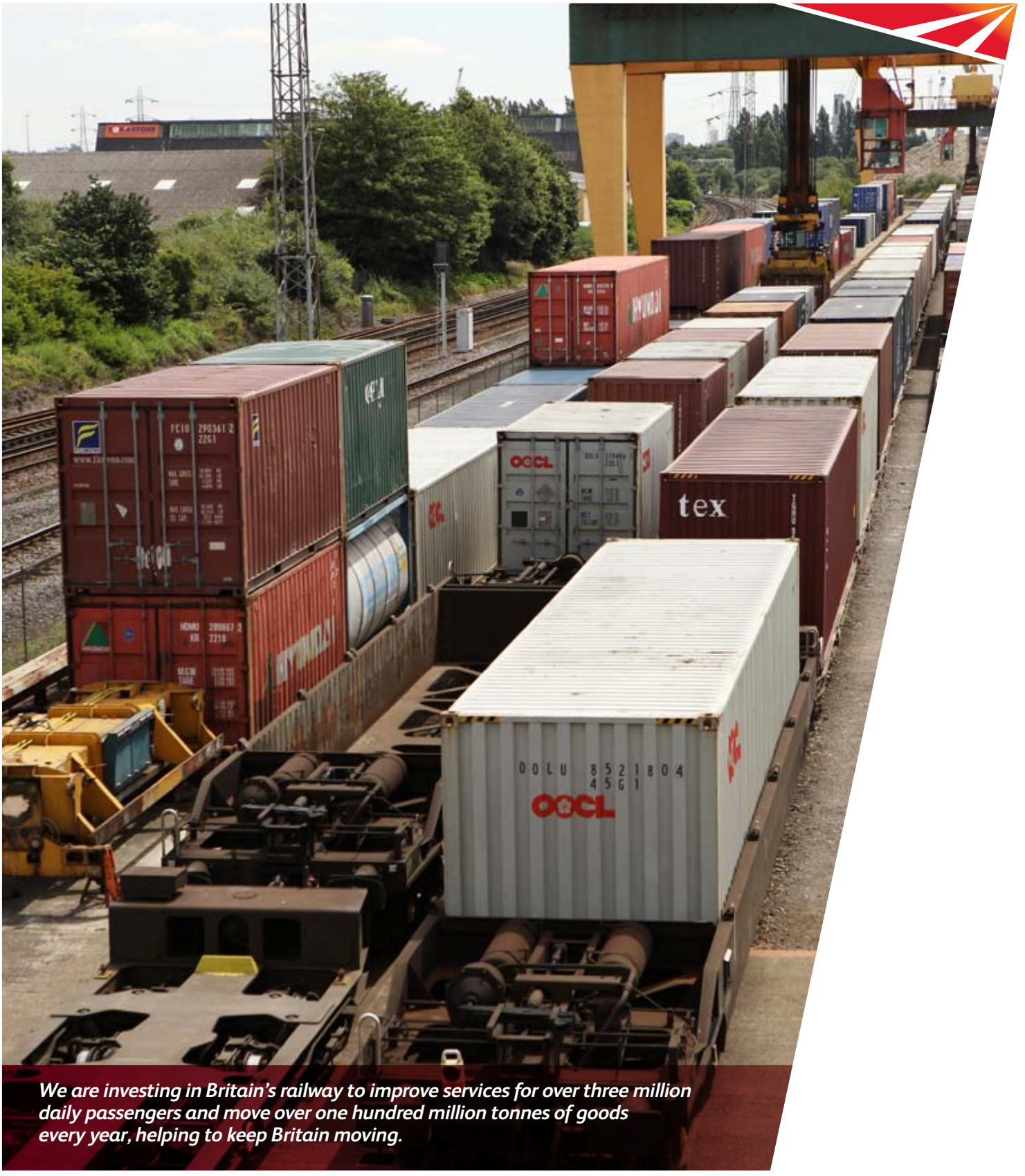
Moving ahead
Investing in the future



We are investing in Britain's railway to improve services for over three million daily passengers and move over one hundred million tonnes of goods every year, helping to keep Britain moving.

Investing in the future

Our two-year £71m scheme involving work on almost 50 sites between Southampton and Nuneaton will allow larger, modern shipping containers to be transported efficiently by train across the whole of Great Britain. 50,000 container freight journeys a year will transfer from the UK's roads to the railway

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Annual Return

Reporting on the year 2009/10

Executive Summary

Introduction

This Annual Return reports on our achievements, developments and challenges during 2009/10, the first year of Control Period 4 (CP4), and is the primary means by which we demonstrate progress in delivering outputs established in the Periodic Review 2008 (PR08).

The Annual Return is a public document, which enables stakeholders to use it as an important reference. This and previous editions of the Annual Return are available on the Network Rail website under “Regulatory Documents” and “Regulatory Compliance and Reporting”.

The Annual Return includes the following sections:

- operational performance and stakeholder relationships;
- network capability, traffic and network availability;
- asset management;
- activity volumes;
- safety & environment;
- expenditure;
- efficiency and finance; and
- enhancement schemes.

For most measures we have provided disaggregated information for Scotland and England & Wales together with the network total where appropriate, although there are some measures which only have network-wide information and cannot be disaggregated further. This Annual Return follows the agreed form as approved by the Office of Rail Regulation (ORR) in 2009 and is prepared in accordance with Condition 12 of our network licence.

Overall performance in 2009/10

We have made a good start to the new control period. Most regulatory and internal targets have been met for the year and we are on course for meeting the CP4 targets. No breaches of the network licence were declared during 2009/10 although ORR has highlighted some areas of concern, such as issues with the new Integrated Train Planning System (ITPS) and performance on the West Coast Main Line following the completion of the upgrade in 2008/09. Although we missed five of the sector level performance targets, ORR accepted that this was due to the extreme weather and if not for this we would probably have met all the public performance measure (PPM), cancellation and significant lateness (CaSL) and delay minute obligations for the year. In addition, despite improvements in safety generally, as a result of our safety initiatives and good progress for passenger safety, there were unfortunately three workforce fatalities on the network.

Highlights for the year include:

- PPM of 91.5 per cent – the highest level of train punctuality since the measure was introduced;
- improvements in infrastructure reliability – demonstrated by the 11 per cent reduction in the number of infrastructure incidents causing delay compared to last year;
- broken rails of 152 – continuing the trend for the lowest ever recorded;
- the reduction in both the passenger and freight measures of disruption caused by possessions – well ahead of the regulatory target;
- total efficiency savings of £265 million; and
- good progress in delivering our enhancements projects.

A summary of the year’s performance against the regulatory targets is shown in Table 1 and later sections of this Annual Return provide more detailed information.

Table 1: Performance against CP4 regulatory targets

Measure	*Regulatory target 2009/10*	*Performance in 2009/10*
Passenger safety index (MAA)	0.248	0.215
Workforce fatalities and weighted injuries (MAA)	0.098	0.178
PPM (% MAA) England & Wales long distance	88.6	88.7
PPM (% MAA) England & Wales London & South East	91.5	91.5
PPM (% MAA) England & Wales Regional	90.5	92.5
PPM (% MAA) England & Wales Total	91.0	91.6
PPM (% MAA) Scotland Total (ScotRail)	90.9	90.6
Cancellations & significant lateness (% MAA) England & Wales long distance	4.9	4.6
Cancellations & significant lateness (% MAA) London & South East	2.3	2.5
Cancellations & significant lateness (% MAA) Regional	2.6	2.1
Delay mins – passenger (000's) England & Wales	6,270	6,152
Delay mins – passenger (000's) Scotland (ScotRail)	436	548
Delay mins per 100 train km – freight	3.68	4.02
PDI – passenger (MAA)	1.02	0.63
PDI – freight (MAA)	1.00	0.82
Station Stewardship Measure (by category)		
A	2.48	2.28
B	2.60	2.40
C	2.65	2.47
D	2.69	2.53
E	2.74	2.52
F	2.71	2.54
Scotland (all stations)	2.39	2.24
Network Capacity	Generally good progress – see Section 9 for progress with CP4 enhancement programme	
Network Capability	See Section 2 on progress	

Note: MAA is the moving annual average

Operational performance and stakeholder relationships

Train punctuality has continued to improve this year with PPM of 91.5 per cent for the network, the best ever recorded. This is better than the 2008/09 figure of 90.6 per cent and ahead of the target. Train delays to passenger and freight services attributed to Network Rail reduced by 654,000 minutes compared to last year resulting in 8.185 million minutes. This was 7.4 per cent better than the previous year but 0.7 per cent worse than our Delivery Plan target of 8.125 million minutes. We reduced delays and improved punctuality despite the severe winter weather and the increase in train miles. The bad weather resulted in Network Rail missing its Scotland and freight delay minutes targets. A summary of operational performance for the last six years (i.e. CP3 and the first year of CP4) is shown in Table 2.

Table 2: Trends in PPM and Network Rail delay minutes for the last six years

	2004/05	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Public Performance Measure (PPM)	83.6%	86.4%	88.1%	89.9%	90.6%	91.5%
Total delay minutes (millions)	11.4	10.46	10.53	9.5	8.84	8.18
Passenger train delay minutes per 100 train km	2.17	1.92	1.91	1.74	1.59	1.42
Freight train delay minutes per 100 train km	4.52	4.36	4.61	4.33	4.01	4.02
Cancellations and significant lateness	3.32%	3.09%	3.08%	2.79%	2.76%	2.60%
Passenger and freight traffic (million train kms)	478	487	488	486	498	513

Table 3: PDI-P and PDI-F

	Actual 2008/09	*Actual 2009/10*	*2009/10 regulatory target*
PDI-P	0.87	0.63	1.02
PDI-F	1.16	0.82	1.00

As a result of the performance improvement schemes and processes, delays caused by Network Rail infrastructure and operations reduced and this helped offset the impact of the bad weather. In particular, delays due to track defects and temporary speed restrictions (TSRs) reduced and improvements in the general management of the infrastructure resulted in better performance. We also met the target for CaSL in England & Wales of 2.8 per cent and achieved a figure of 2.6 per cent in the year.

There has been good progress on the Route Utilisation Strategy (RUS) programme during 2009/10. To date eighteen RUSs have been established.

The most recent customer satisfaction survey was conducted in October and November 2009. It shows an improvement in both TOC and FOC perception of Network Rail compared to the 2008 survey. This is principally due to Network Rail being seen to value its customers, understanding their needs and delivering on its promises. However, our customers are least satisfied with involvement in decision-making and consider us to be poorly integrated and inflexible.

Passenger Satisfaction from the Passenger Focus National Passenger Survey in autumn 2009 resulted in the best ever overall satisfaction score of 83 per cent. Passengers' main concern relates to being kept better informed about services during times of disruption.

The results of the latest supplier survey show that supplier satisfaction improved slightly compared to last year, although further improvement is still needed. We have many plans and initiatives to improve our supplier satisfaction and recognise that we need to focus on better levels of collaboration, improved long-term planning and our attitude towards innovation, while behaving as a more integrated and consistent organisation.

For the first time, we are providing details of our responsiveness in resolving public enquiries relating to the lineside visual environment. Our target for 2009/10 and 2010/11 is to achieve 90 per cent of complaint closures. This was achieved for the last three periods of 2009/10.

Network capability, traffic and network availability

For the first time, this section also includes measures on network availability as well as improvements from the Infrastructure Capability Programme. There was an increase of 3.8 per cent in passenger train traffic during the year. However, there was a decrease in both freight gross tonne miles and freight train miles due to the decline in "general merchandise" traffic. The possession disruption index for passenger and freight (PDI-P and PDI-F) measures the impact of disruption to the network from possessions (Table 3). Both measures were ahead of the 2009/10 regulatory target and are currently ahead of the target for the end of CP4. This is partly due to the reduced work volumes compared to the PR08 assumptions but also due to important underlying improvements made during the year.

Asset management

Overall asset reliability and condition improved during the year. This is a good start to the control period and we are on course to meet our targets for CP4.

The number of infrastructure incidents causing train delays reduced by 11 per cent compared to last year, which shows continued improvement in this area. Failure rates reduced for all the main categories of infrastructure except for signalling system and power supply failures, which have increased slightly. We will, of course, continue to focus our efforts to improve this area.

The number of broken rails and TSRs has continued to improve, but track geometry has worsened during the year. This was due to the effects of an abnormally severe winter period, following a dry summer.

Signalling condition has improved and there has been a further reduction in the number of signalling failures. We have included a new measure for tunnels condition and, as for the other civils measures (i.e. for bridge condition and earthworks failures) these have shown a slight improvement. The station stewardship measure has improved slightly for the network total and the light maintenance depot stewardship measure has slightly deteriorated. The latter is principally due to the small number of depots which makes the measure very sensitive to any changes. Due to the survey cycle for stations and depots, the regulatory target is set for the end of CP4 by which time we would have completed the full survey cycle.

Table 4: Comparison of asset measures with previous years

Measure	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
Broken rails (Nr)	317	192	181	165	152
Rail Defects	20,605	18,455	9,150	8,358	6,389
TSRs (Nr) (The definition has changed during 2009/10 and the changes have been reflected in previous year's data)	4,877	4,394	4,550	4,436	2,091
Track geometry	The way track geometry is calculated has changed for the year 2009/10. See section 3 for more details. For details of previous years, see section 3 of previous years' Annual Returns.				
Earthworks failures (Nr)	41	90	107	61	57
Tunnels condition (This is a new measure for 2009/10)					Bore 88.6 and Portal 92
Bridge condition score	2.14	2.12	2.09	2.08	2.08
Signalling failures (Nr)	23,367	22,704	19,900	19,622	18,301
Signalling asset condition	2.39	2.39	2.38	2.39	2.31
AC power incidents (Nr)	49	69	63	66	46
DC power incidents (Nr)	6	11	9	14	14
AC traction sub-stations condition	–	–	3.53	2.78	2.70
DC traction sub-stations condition	–	–	3.61	2.53	2.32
AC contact systems condition	1.7	1.7	1.7	1.6	1.6
DC contact systems condition	1.8	1.9	1.9	1.9	1.9
Station stewardship (new measure)	Before 2008/09, a different measure, the Station Condition Index was used.			See Section 3 Annual Return 2009	See table 1
Light maintenance depot stewardship measure	2.58	2.58	2.49	2.52	2.50
Asset reliability (nr of infrastructure incidents causing delay)	56,470	58,312	53,424	50,961	45,365

Note: For all measures in this table a lower figure indicates improvement.

Table 5: Activity volumes

	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Rail (km of track renewed)	816	1,120	1,028	1,039	1,206	810
Sleeper (km of track renewed)	670	744	738	763	735	438
Ballast (km of track renewed)	685	798	850	837	763	509
Switch & crossings (Nr. of full units replaced)	511	520	442	436	419	231
Signalling (SEUs)[1]	1,678	278	481	1,441	981	813
Bridge renewals (Nr.)[2]	153	151	149	358	358	248
Culvert renewals (Nr.)[2]	9	9	11	44	33	25
Retaining wall renewals (Nr.)[2]	10	10	8	18	15	5
Earthwork renewals (Nr.)[2]	77	67	54	163	157	113
Tunnel renewals (Nr.)[2]	28	40	20	43	44	24

Notes:

1. Signalling equivalent units are counted once a scheme is actually commissioned
2. These measures refer to the number of renewal projects above a threshold value

Table 6: Summary of safety measures

Measure	2005/06	2006/07	2007/08	2008/09	2009/10
Workforce safety – accident frequency rate MAA	0.359	0.263	0.226	0.231	0.159
Infrastructure wrong side failures (Nr)	79	66	60	53	72
Level crossing misuse – incidents MAA	32.23	26.38	28.46	31.46	28.23
Category A signals passed at danger (Nr)	328	334	354	293	277
Irregular working – incidents MAA	n/a	70.85	57.38	32.61	21.61
Malicious acts per 100 route miles (Nr)	6.154	6.285	5.539	5.245	4.300
Passenger Safety Indicator					0.215

Note: MAA is the moving annual average

The volume of renewal activity in 2009/10 is shown in Table 5.

The volume of track renewals delivered is lower than in previous years, consistent with our plan as we have deferred work into later years of CP4 to enable us to develop more efficient ways of delivering track renewals.

Safety and environment

A summary of the principal safety KPIs is shown in Table 6. Further safety information reporting on the year 2009/10 is covered by the Safety and Environment Assurance Report which is available to the industry.

Tragically during the year 2009/10, there was one employee fatality and two contractor employee fatalities. This highlights the overarching importance of safety and the need for the industry to work together in improving safety. The passenger safety indicator is a new summary KPI showing Network Rail's contribution to industry safety. It comprises train accident risk and weighted personal injuries to passengers at level crossings and Network Rail managed stations. The 2009/10 result is ahead of the year end target of 0.248.

The main safety KPIs indicate an improvement in safety performance during the year. Only Infrastructure wrongside failures have deteriorated since last year. This is principally due to the heavy snowfall. We are continuing to focus on the root causes of infrastructure issues in managing the assets and therefore working to improve this area. We have continued to introduce and implement initiatives to improve safety awareness and behaviour, including:

- workforce safety – the continuation of the 'Safety 365' awareness campaign and the safety league table for maintenance delivery units;
- level crossing misuse – the continuation of initiatives based on the four strategic elements (education, enforcement, enablement and engineering) and the introduction of new technology has reduced the number of level crossing misuse incidents compared to the previous year;
- category A SPADs – this has reduced since the introduction of Train Protection Warning System and during the year sharing of best practice and working with train operating companies to understand and manage driver

behaviour has reduced the number of Category A SPADs;
- irregular working – a survey of safety culture was done so that the cross-functional working group could target action plans to address risks; and
- criminal damage – this has also reduced as a result of co-operation with industry partners and continuing to evolve the "No Messin" campaign.

We have also reported the environmental measures in Section 5 which are used to track progress on our three core aims of achieving sustainable consumption, improving energy efficiency and protecting the natural environment. The Network Rail Corporate Responsibility report provides more information on our environmental performance generally.

Expenditure, efficiency and finance

Table 7 summarises expenditure over the last five years.

Comparing controllable opex and maintenance costs between 2008/09 and 2009/10 does not provide a like-for-like comparison. This is because there are a number of additional costs in CP4 to reflect the required outputs of the final determination (such as the HLOS performance fund) and in CP3 an adjustment was made to reclassify costs between controllable opex and maintenance (not the case for CP4). In addition to this, the higher controllable operating costs reported for the year were due to one-off transformation programme costs, increases in employment related costs such as pensions and the impact of the rpi related salary settlement.

Maintenance costs reduced through a combination of tight cost management, control of headcount, productivity improvements and reductions in waste. Improved management controls and planning led to a reduction in overtime costs and a reduction in the use of labour subcontractors for core work. We have invested in training over recent years and in 2009/10 we utilised the increased skills of our employees to carry out tasks previously carried out by contractors.

Renewals expenditure was down on last year mainly as a result of completing the West Coast Route Modernisation project in 2008/09. Track renewal expenditure was also lower, consistent with our CP4 Delivery Plan, to enable us to deliver higher activity volumes more efficiently later in the control period.

Enhancement expenditure remained at the same historically high levels as the previous year and we have made good progress in achieving the required development work and early delivery milestones for the CP4 enhancement programme. The two most significant areas of spend in 2009/10 were on the Thameslink programme, including the installation of a new bridge deck at Blackfriars, and on the Airdrie to Bathgate scheme.

In the last control period we achieved savings in overall operation, maintenance and renewal costs of some 27 per cent; this was a significant achievement albeit slightly behind the ORR target for CP3 of 31 per cent. For CP4 the ORR has assumed further savings of 21 per cent by the end of CP4. However, this was based on an assumption that we would achieve efficiency savings of more than 27 per cent in CP3.

Table 7: Expenditure comparison in outturn prices (£m)

	2005/06	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Operating costs (controllable)	865	878	878	908	991
Maintenance	1,192	1,146	1,118	1,104	1,071
Renewals	2,673	2,777	2,894	3,144	2,304
Enhancements	473	569	1,061	1,553	1,591

Notes:
- Operating costs, maintenance and renewals are consistent with the regulatory accounts;
- Operating costs exclude items classified as non-controllable (eg. ORR licence fee, British Transport Police, electricity traction costs, safety levy and cumulo rates); and
- Enhancements include investments funded by third parties.

We have established our Cost Efficiency Measure (CEM) to track cumulative savings over CP4 in controllable opex, maintenance and renewals. The CEM uses a baseline that takes into account the actual efficiency savings achieved in CP3 rather than the level assumed by ORR in its final determinations for CP4. It also takes into account specific increases in costs in 2009/10 that were not reflected in ORR's assumptions, particularly the lagged effect on staff cost increases that were agreed in autumn 2008 when prevailing inflation was higher than experienced in 2009/10. As a result of these increases, we need to achieve savings of nearly 24 per cent (as measured by the CEM) over CP4 to reduce costs to the level assumed by ORR. The CEM enables us to measure our progress in driving down costs during CP4 based on the challenge we faced at the start of the control period. Using this measure, we have achieved savings of £265 million (5.8 per cent) in the first year. However, we recognise that the CEM does not enable continuous measurement of efficiency from the start of CP3 on a like-for-like basis. We have therefore calculated the level of efficiency that we need to achieve in CP4 reflecting the actual savings in CP3 but excluding the specific cost increases experienced in 2009/10. On this basis, we will need to deliver efficiency savings of 22 per cent in CP4 and have achieved savings of four per cent in 2009/10. As this does not reflect the full challenge we need to manage from the start of CP4, we will continue to use the CEM to measure progress.

The CEM reports total savings of £265 million compared to the cost baselines we established for the start of CP4 as shown in Table 8. This represents a good start to meeting the tough efficiency target set by the ORR and we are slightly ahead of our CP4 Delivery Plan.

Enhancements schemes

During the year there has been a growth in the number of enhancement projects Network Rail manages. As well as large projects which add capacity, there are also many smaller schemes which provide improvements for our customers and the community. Some highlights include:

- Airdrie to Bathgate – a new line being built in Scotland, scheduled to open in December 2010;
- the programme of work for the London 2012 Olympics continues; this includes new lines, new stations, better facilities and new rolling stock on the North London Line and East London Line, in addition to works to support and enable the transport links being developed in the Stratford area;
- construction is well advanced on the Thameslink programme;
- also the Reading project has advanced, as well as key development work now underway for Crossrail;
- Newport station regeneration; and
- redevelopment of Birmingham New Street.

Table 8: Savings since the end of CP3 as reported by our Cost Efficiency Measure (CEM)

	Saving (£m)	*Saving (%)*
Controllable Opex	19	1.9
Maintenance	86	7.4
Renewals	160	6.6
Overall saving	265	5.8

Introduction

The Annual Return reports on Network Rail's performance in the stewardship of the rail network. It describes our operational performance, asset management, activity volumes, investment and expenditure. This year's Annual Return is structured similarly to last year with the addition of some new measures and areas of reporting to reflect our commitments for the new control period. We have provided five years of data wherever this is possible for trend and comparative purposes. For some measures that have more than five years of data available, this information can be found in previous Annual Returns.

As in previous years we have included a network total for each measure and where appropriate more detailed information is provided by the 26 strategic routes[1] and the nine operating routes. The map of the network below illustrates these. There is also information and commentary on variances and issues of interest from the year. Throughout the document '0' represents rounded numbers that are less than 0.5.

It should be noted that end of year figures are taken at a specific point in time for publication. Therefore some figures have been restated from last year. Most figures have not been adjusted.

Scope of reporting against targets

The targets included within this Annual Return are regulatory targets as determined in the Periodic Review 2008 and provided in the final determinations of Network Rail's outputs and funding for 2009 to 14 and the Network Rail Control Period 4 Delivery Plan 2009.

Most asset condition information is based on assessments from a sample of assets and as more surveys are carried out, the reliability of the data reported for each asset category will improve.

Independent Reporter

Since October 2002, the company together with ORR has employed independent Reporters. The role of the Reporters is to provide independent technical audit services for ORR and Network Rail. Whilst undertaking this role, they are expected to deliver benefits to Network Rail through suitable recommendations about how we can improve our business processes. We have appointed a new Reporter, Arup, to look at our outputs and the processes, systems and data related to the reporting of our performance throughout the year including data in this Annual Return. The Reporter has therefore been considering the quality, accuracy and reliability of the data and related processes that we use for reporting our performance during the year. This new Reporter contract differs from the previous years' Reporter contracts which only focused on the Annual Return. This new contract provides for audits throughout the year and for the Reporter to focus on specific areas each quarter. As well as this, their quarterly reports should include an overview of progress generally as the Reporter will also be reviewing our progress in addressing agreed actions resulting from the recommendations (including those from Halcrow, the previous Reporter for the Annual Return). The Arup reports can be found on the ORR's website under "Network Rail Regulation" and "Independent Reporters".

Confidence reporting

We have assessed the quality of the data and information presented and described this by the use of confidence grades.

The confidence grades consist of two aspects: a letter indicating the reliability of the data (A–D) where A is the most reliable, being based on sound documented records, procedures, investigations and/or analysis, and D relies on unconfirmed verbal reports, cursory inspections or analysis; and a number describing the accuracy (1–6 where 1 is within ± 1 per cent and 6 indicates poor accuracy defined as within the band ±50 per cent – ±100 per cent). Most measures are reported as at A2, A3, B2 or B3 confidence; however there are some reported outside this typical range. For small numbers where accuracy cannot be properly ascribed an 'X' is substituted in the numeric part of the confidence grade. The tables below summarise the reliability and accuracy bands and confidence grades that are compatible:

1 During the year we changed our strategic routes such that there are now 17. The new routes will be used in future.

Table 9: Reliability band description	
A	Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment.
B	As A but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation.
C	Extrapolation from limited sample for which Grade A or B data is available.
D	Unconfirmed verbal reports, cursory inspections or analysis.

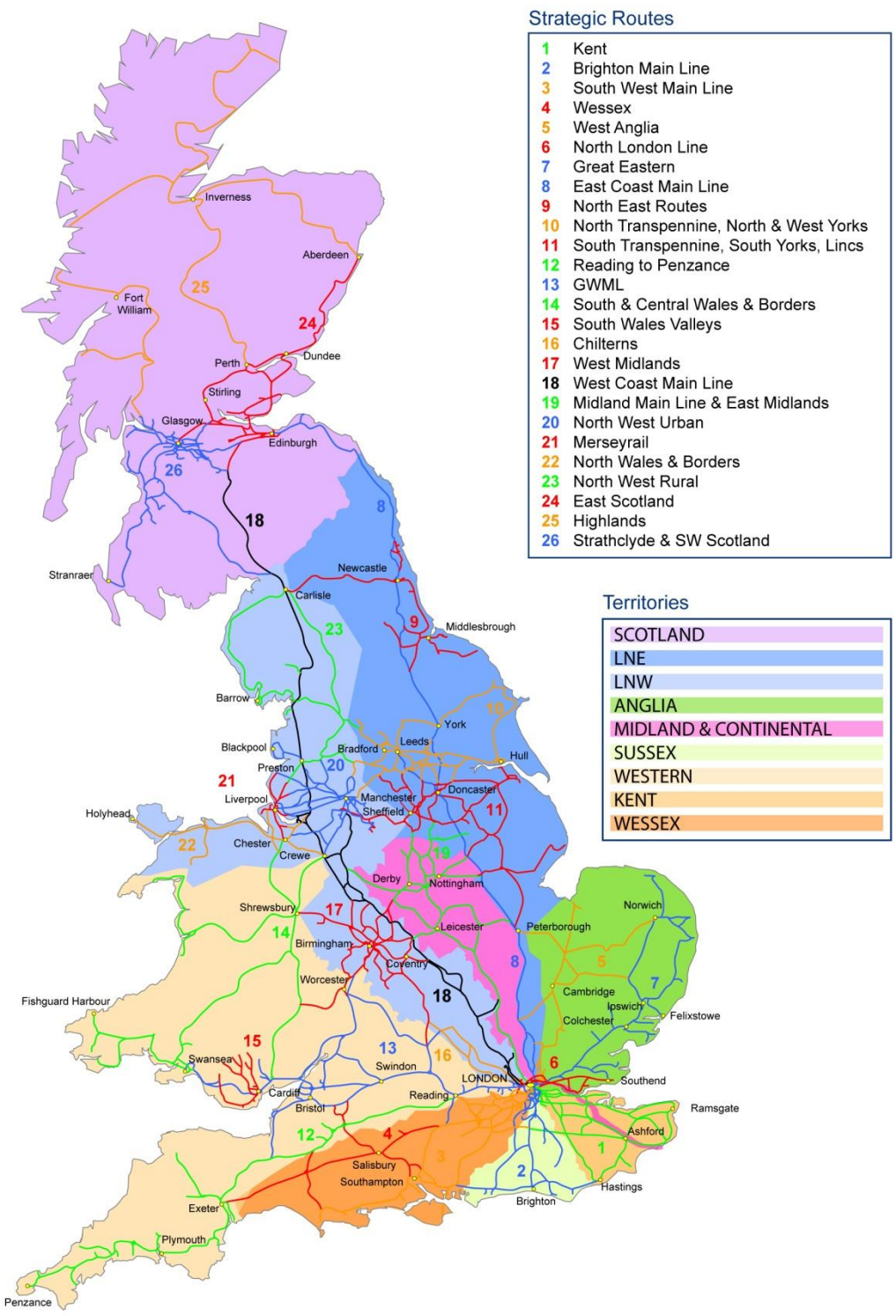
Table 10: Accuracy band		
	Accuracy to within +/–	***But outside +/–***
1	1%	–
2	5%	1%
3	10%	5%
4	25%	10%
5	50%	25%
6	100%	50%
X	Accuracy outside +/– 100 %	Small numbers or otherwise incompatible

Table 11: Compatible confidence grades				
	Reliability Band			
Accuracy band	***A***	***B***	***C***	***D***
1	A1			
2	A2	B2	C2	
3	A3	B3	C3	D3
4	A4	B4	C4	D4
5			C5	D5
6				D6
X	AX	BX	CX	DX

Regulatory Accounts

The ORR reporting regime includes a requirement to prepare a set of Regulatory Accounts to report information that is relevant to setting access charges and which allows Network Rail's financial performance compared to the Periodic Review 2008 to be monitored. Regulatory Accounts for 2009/10 are not included in this Annual Return, but are submitted to ORR in a separate document that is also made publicly available.

Figure 1: Map of the network



Section 1 – Operational performance and stakeholder relationships

Introduction

The main cross-industry measure of operational performance for franchised passenger services is the Public Performance Measure (PPM), which is a measure of the overall punctuality and reliability of train services delivered to passengers. Network Rail is accountable for the reporting of industry train performance, and PPM figures are shown in this section at national, operator and sector level.

Delay minutes remain the main operational performance measure underpinning the punctuality of passenger and freight train services in order to bring focus onto the causes of disruption and thereby enable performance improvement. Delays to train journeys experienced by passenger and freight companies are broken down into Network Rail attributed delays and those attributed to train operators. Those attributable to Network Rail typically relate to infrastructure, timetabling and operation of the network, and also include external events impacting the network where Network Rail's role is to control or mitigate impacts. Those attributable to train operators typically relate to train operations, fleet reliability, problems with train crew resources or external causes affecting trains. The Annual Return provides data on Network Rail attributed delays only and this section also focuses on infrastructure related delays as this is an indication of Network Rail's asset management. Figures are presented for 2009/10 in delay minutes and in minutes delay per 100 train kilometres, with disaggregated results split by cause, by Network Rail route, and into those delays affecting passenger and freight trains.

This section also reports on our stakeholder relationships, including information on our customer and supplier satisfaction results as well as progress on the Route Utilisation Strategies and Joint Performance Improvement Plans. For the first time in the Annual Return we are also including the Passenger Satisfaction Survey results from the bi-annual survey conducted by Passenger Focus and Network Rail's complaints management statistics. We have provided information on our Dependent Persons Code of Practice for parties interested in doing business with Network Rail. The end of the section also reports on regulatory enforcement during the year.

Overview: PPM and delay minutes

PPM punctuality for the overall network increased by 0.9 percentage points to 91.5 per cent for the full year 2009/10.

This improvement equates to a reduction of 10 per cent in the number of trains running late, and matches exactly the reduction in total delays to franchised passenger operators (whether attributable to Network Rail or to train operators) of 10 per cent after allowing for the change in train kilometres run.

We have reduced delay minutes attributable to Network Rail by about 654,000 (7.4 per cent) compared to the previous year, to 8.185 million minutes in 2009/10. This was achieved at the same time as an increase in train miles run of three per cent, leading to a reduction in delay minutes per 100 train km of 10 per cent.

This also comes in spite of the extreme winter weather this year which had a very significant impact on train performance across most of the country. In the four-week period over Christmas (Period 10) PPM dropped to 80 per cent, compared to 90 per cent in the corresponding period of 2008/09, and 87 per cent in the worst four-week period of the winter that year, when the worst of the weather had been largely confined to the South East.

Table 1.1: Public Performance Measure (PPM) for franchised passenger services

	2004/05	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
PPM (%)	83.6	86.4	88.1	89.9	90.6	91.5

Table 1.2: Delays to all train services

Network Rail-attributed delays	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Total Delay minutes (incl. minor operators)	11,402,720	10,464,387	10,531,216	9,499,583	8,838,885	8,184,797
Train km	478,038,920	487,317,190	487,603,246	486,224,904	497,696,635	513,367,454
Delay per 100 train km	2.39	2.15	2.16	1.95	1.78	1.59

Notes:

- Total delay minutes include delays to a number of minor operators and some unallocated minutes, which are excluded from the main measure of major operators (passenger and freight). They are nevertheless included in the total Network Rail delay minutes. These include delays caused to LUL Bakerloo line services, NEXUS, charter operations and miscellaneous services
- The 2009/10 delay minutes results have been sourced from a new IT system (PSS). This provides slightly more accurate figures than the systems and processes used previously (PUMPS). The overall impact on the reported results of the change in systems is not material.
- The number of train kilometres run excludes empty coaching stock movements, locomotive movements and engineering trains, and is as recorded in the performance database (PALADIN);
- The delay per 100 train km is based on total delay minutes, divided by the train kilometres run, multiplied by 100.

Prior to the onset of this severe weather, Network Rail had been on track to meet or exceed all of its performance targets. The British Isles then faced the most severe winter in decades with the temperatures dropping to –22°C in the Scottish Highlands. Snow and ice covered much of Great Britain for about three weeks, representing the longest continually cold period for almost 30 years. The severe weather caused widespread disruption to all modes of transport across the country. Train performance dipped sharply, particularly from mid December through into early January, and to a lesser extent for the remainder of the poor weather period, although in Scotland the impact of the weather was both more prolonged and repeated later in the winter season.

The impact of the poor winter weather was particularly acute for London & South East and Long Distance services, Scotland and Freight. In the case of London & South East and Long Distance services it also led to a significant impact on Cancellations and Significant Lateness (CaSL).

Network Rail delay to freight services (measured as delay per 100 train km) was also severely impacted, contributing to an unchanged level of performance compared to the previous year, despite the level of planned real improvement.

Public Performance Measure (PPM)

PPM combines figures for punctuality and reliability into a single performance measure covering all scheduled services operated by franchised passenger operators and four open access operators as defined in the CP4 Delivery Plan. PPM measures the performance of individual trains against their planned timetable for the day, and shows the percentage of trains 'on time' compared to the total number of trains planned. PPM for the year is expressed as a moving annual average (MAA).

A train is defined as 'on time' if it arrives at its planned destination station within five minutes (i.e. 4 minutes 59 seconds or less) of the planned arrival time. For longer distance operators a criterion of arrivals within ten minutes (i.e. 9 minutes 59 seconds or less) is used. Where an operator runs a mixed service (shorter and longer distance), an aggregation of within five minutes and within ten minutes is used for 'on time' (i.e. taking the number of trains that actually arrive within the five minutes (short distance) and adding this to the number of trains actually arriving within ten minutes (long distance) and then dividing by the total number of trains booked).

Table 1.3 shows the network total for 2009/10 as well as the individual results for each of the franchised passenger operators and four open access operators.

Table 1.3: PPM: network total and by train operating company (per cent)		
Franchised Operators		
EA	First Transpennine Express	92.2%
EB	National Express East Anglia	91.1%
ED	Northern Rail	91.6%
EF	First Great Western	92.4%
EG	First Capital Connect	89.4%
EH	CrossCountry	90.1%
EJ	London Midland	89.8%
EK	London Overground	93.2%
EM	East Midlands Trains	92.5%
HA	First ScotRail	90.6%
HB	East Coast	87.4%
HE	Merseyrail	96.4%
HF	Virgin Trains	84.6%
HL	Arriva Trains Wales	94.9%
HO	Chiltern Railways	95.2%
HT	c2c Rail	96.6%
HU	Southeastern	89.4%
HW	Southern	90.7%
HY	Stagecoach South Western	92.6%
Open Access Operators		
EC	Grand Central	84.2%
EI	Wrexham & Shropshire	84.4%
HM	Heathrow Express	95.8%
PF	First Hull Trains	81.4%
Total National PPM		**91.5%**

Table 1.4: PPM by sector for England & Wales and Scotland		
Full year results 2009/10 (franchised passenger and open access operators)		
By sector	***PPM Actual***	***PPM Target***
London & South East	91.5%	91.5%
Long Distance	88.7%	88.6%
Regional	92.5%	90.5%
England & Wales (total)	91.6%	91.0%
Scotland	90.6%	90.9%

The overall network PPM for 2009/10 was 91.5 per cent up from 90.6 per cent in the previous year.

The results were significantly ahead of the regulatory target for England & Wales overall, but for Scotland PPM was 0.3 per cent less than the regulatory target.

Within the England & Wales total, both the London & South East and Long Distance sectors were in line with the regulatory targets, while performance of the regional sector was significantly ahead of target. Table 1.4 shows PPM by sector for England & Wales and Scotland

Summarised network-wide data (delays to major operators)

The delay minutes data presented in the remainder of this section are Network Rail attributed delays affecting the main scheduled passenger train services (including four open access operators as set out in our CP4 Delivery Plan) and freight operators. This is similar to data presented for previous years and excludes delays to other types of operator (such as London Underground services, NEXUS Metro and charter operations), which account for a further approximately 0.8 per cent of the total Network Rail attributed delays.

Network-wide total delays to passenger train services

Total Network Rail attributed delays to passenger trains reduced in 2009/10 by 7.0 per cent. Traffic volumes, measured in train kilometres run, increased by 3.5 per cent compared to 2008/09. This resulted in a combined impact of a 10.2 per cent improvement in delay minutes per 100 train km, which fell to 1.42 minutes. (The trend since 2004/05 is summarised in Table 1.5).

The trends in delays to passenger trains (measured as delay per 100 train km) over the last six years is illustrated in Figure 1.1. This highlights the general improvement over this time-frame, together with the impact of particular periods of poor performance, which generally coincide with unusually severe weather impacts.

The impact of the poor weather period (December/January) can be clearly seen, and was much more significant than the previous winter, or any period since late 2006/07.

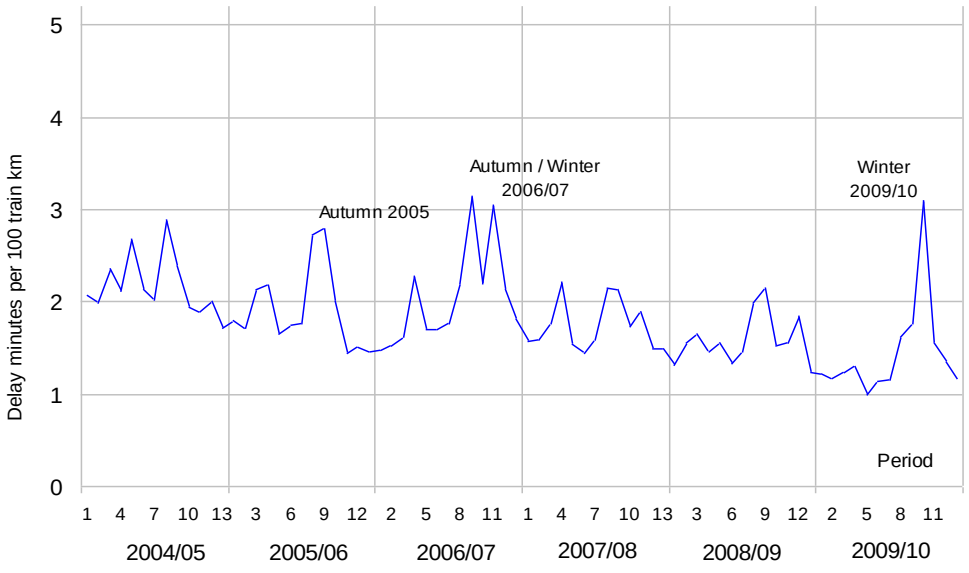
Table 1.5: Network-wide delays to passenger train services

Network Rail-attributed delays	***2004/05***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
Delay minutes	9,311,884	8,386,939	8,403,701	7,695,360	7,208,574	6,700,700
Train km	428,829,386	437,524,953	439,123,839	442,271,678	454,798,388	470,714,609
Delay per 100 train km	2.17	1.92	1.91	1.74	1.59	1.42

Notes:

- The delay minutes totals are based on all PfPI (Process for Performance Improvement) delays, affecting applicable main scheduled passenger operators (franchised operators plus four open access operators Heathrow Express, Grand Central, Wrexham & Shropshire, and First Hull Trains). Note: prior year figures included delays and mileage for NEXUS Metro and Eurostar services; in 2008/09 these accounted for 12,059 minutes of delay.
- Train km run are for trains of applicable operators, excluding empty coaching stock movements and locomotives running "light", as recorded in PALADIN;
- Delays per 100 train km are based on all PfPI delay minutes, divided by the train kilometres run, multiplied by 100.

Figure 1.1: Delay minutes per 100 train km over time



England & Wales delays to passenger train services

Total Network Rail attributed delays in England & Wales to passenger trains reduced in 2009/10 by 8.2 per cent. Traffic volumes, measured in train kilometres run, increased by 3.5 per cent compared to 2008/09. This resulted in a combined impact of an 11.3 per cent improvement in delay minutes per 100 train km, which fell to 1.43 minutes. The delays to passenger services were 1.9 per cent better than the regulatory target. The trend since 2004/05 is summarised in Table 1.6.

The causes of this improvement are reflected in the detailed results for the overall network and are covered in more detail below.

Scotland delays to passenger train services

Total Network Rail attributed delays affecting Scotland passenger services (First ScotRail) increased in 2009/10 by 8.1 per cent. Traffic volumes, measured in train kilometres run, increased by 3.8 per cent compared to 2008/09. This resulted in a combined impact of a 4.1 per cent increase in delay minutes per 100 train km, which increased to 1.39 minutes. The delays to passenger services were 25.8 per cent worse than the regulatory target. The trend since 2004/05 is summarised in Table 1.7.

The increase in delay was due primarily to the severe weather. Delay minutes due to severe weather increased by around 75,000 minutes, more than offsetting the real improvements in track, signalling and network management. Passenger services in Scotland were also affected by an increase in external causes of delay compared to the previous year.

The impact of the severe winter weather in Scotland started in period 10 of 2009/10 and continued through the remaining periods of the year to varying extremes. The winter was characterised by significant snowfall and prolonged low temperatures, with December / January being the coldest combined months in Scotland since records began in 1914, with temperatures regularly below –10°C and as low as –22.3°C, and conditions being sufficiently severe that the West Highland line was blocked by an avalanche for some time. Up to 80cm of fresh snow fell on some highland routes on some days over this period. This affected all modes of transport significantly and therefore the industry's response to the conditions.
The priority agreed with First ScotRail and stakeholders such as Transport Scotland was to maintain a service on all routes where possible, as rail was often the only mode of transportation available.

Network-wide total delays to freight train services

Total Network Rail attributed delays to freight trains reduced in 2009/10 by 9.4 per cent. Traffic volumes, measured in train kilometres run, also decreased by 9.4 per cent compared to 2008/09. This resulted in no change overall in the key measure of delay minutes per 100 train km, which was 4.02 minutes.

Table 1.6: England & Wales delays to passenger train services

Network Rail-attributed delays	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Delay minutes	8,595,100	7,754,283	7,854,848	7,223,137	6,701,324	6,152,260
Train km	392,298,938	400,286,709	402,115,175	404,921,582	416,828,459	431,295,163
Delay per 100 train km	2.19	1.94	1.95	1.78	1.61	1.43
Regulatory target (minutes)	–	–	–	–	–	6,270,000

Table 1.7: Scotland delays to passenger train services

Network Rail-attributed delays	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Delay minutes	716,784	632,656	548,853	472,223	507,250	548,440
Train km	36,530,448	37,238,244	37,008,664	37,350,097	37,969,929	39,419,446
Delay per 100 train km	1.96	1.70	1.48	1.26	1.34	1.39
Regulatory target (minutes)	–	–	–	–	–	436,000

This reflected the impact of the winter weather which was particularly severe for freight services, the impact of some specific categories of delay, and an increase in freight delay on Anglia route across a number of infrastructure and external causes of delay. The delays to freight services were 9.1 per cent worse than the regulatory target. The trend since 2004/05 is summarised in Table 1.8.

The overall increase in freight delay seen in Period 10 was unprecedented. Unlike late running passenger services, freight trains once on their journey normally have to reach their terminating location and this can result in large delays. Many freight trains were close to missing their allocated slot due to late departure from the yard making overall control of the service difficult. By contrast, in 2008/09 freight services were not significantly affected by the winter weather, as the snow was more confined to the south east corner of the country, where far fewer freight services operate.

Freight performance during 2009/10 also suffered from an increase in the impact of cable theft, related to the rise in the copper price to a new record high. This crime typically impacts areas of high freight traffic density such as Yorkshire, the West Midlands and South Wales. Delays to freight services due to the category affected (external infrastructure damage – vandalism / theft) increased by nearly 15 per cent (per 100 train km), with particularly significant rises in London North Western (+22,726 minutes) and, to a lesser extent, Western and Anglia.

Freight was also disproportionately affected by the increase in overhead line delays (part of category 201) and cable faults (category 304). Dispute takeback and telecoms failure delays also increased.

Table 1.8: National delays to freight train services

Network Rail-attributed delays	***2004/05***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
Delay minutes	2,057,063	2,036,592	2,088,205	1,762,932	1,568,106	1,421,333
Train km	45,519,096	46,727,870	45,258,631	40,700,435	39,086,440	35,395,805
Delay per 100 train km	4.52	4.36	4.61	4.33	4.01	4.02
Regulatory target (delay per 100 train km)	–	–	–	–	–	3.68

Notes:

- The delay minutes totals are based on all PfPI delays affecting applicable freight operators (main scheduled operators);
- Train km run are for trains of applicable operators, excluding locomotives running “light” and non-commercial traffic (such as engineering haulage trains). Source: Network Rail PSS data warehouse
- Delay minutes per 100 train km are based on all PfPI delay minutes, divided by the train kilometres run, multiplied by 100.

Breakdown of performance by operator

The delays to individual passenger and freight operators, and the combined totals, are shown in Tables 1.9 and 1.10 below.

Table 1.9: Delays to individual operators 2009/10

Applicable Passenger Operators		***Delay minutes***	***Train km (million)***	***Delay per 100 km***
Franchised Operators				
EA	First Transpennine Express	229,358	15.87	1.44
EB	National Express East Anglia	567,474	30.20	1.88
ED	Northern Rail	770,553	43.59	1.77
EF	First Great Western	525,563	41.11	1.28
EG	First Capital Connect	253,820	22.79	1.11
EH	CrossCountry	435,847	30.49	1.43
EJ	London Midland	402,428	22.00	1.83
EK	London Overground	72,236	3.06	2.36
EM	East Midlands Trains	254,116	20.79	1.22
HA	First ScotRail	548,440	39.42	1.39
HB	East Coast	178,947	19.29	0.93
HE	Merseyrail	34,862	5.65	0.62
HF	Virgin Trains	460,080	33.87	1.36
HL	Arriva Trains Wales	246,070	22.52	1.09
HO	Chiltern Railways	69,977	9.35	0.75
HT	c2c Rail	31,705	6.15	0.52
HU	Southeastern	532,834	29.11	1.83
HW	Southern	589,102	33.03	1.78
HY	Stagecoach South Western	435,594	37.64	1.16
Open Access Operators				
EC	Grand Central	16,289	1.06	1.54
EI	Wrexham & Shropshire	12,195	0.82	1.49
HM	Heathrow Express	15,731	1.48	1.06
PF	First Hull Trains	17,480	1.44	1.21
Total		**6,700,700**	**470.71**	**1.42**
Applicable Freight Operators				
WA	DB Schenker	672,825	16.84	4.00
DB	Freightliner Intermodal	374,664	8.11	4.62
D2	Freightliner Heavyhaul	219,773	5.83	3.77
PE	First GB Railfreight	103,618	2.49	4.16
XH	Direct Rail Services	50,452	2.12	2.38
Total		**1,421,333**	**35.40**	**4.02**
Combined Total for All Applicable Operators		**8,122,033**	**506.11**	**1.60**

Table 1.10: Delays per 100 train kilometres to individual operators by period 2009/10

	P1	*P2*	*P3*	*P4*	*P5*	*P6*	*P7*	*P8*	*P9*	*P10*	*P11*	*P12*	*P13*	*Full Year total*
Franchised Passenger Operators														
First Transpennine Express	1.16	1.05	1.72	1.22	0.95	1.07	1.30	1.74	1.64	3.24	1.43	1.19	1.27	1.44
National Express East Anglia	2.03	1.19	1.97	2.06	1.17	1.69	1.36	1.68	2.33	4.35	1.73	1.51	1.62	1.88
Northern Rail	1.45	1.39	1.75	1.57	1.29	1.45	1.75	2.58	2.19	3.23	1.73	1.41	1.38	1.77
First Great Western	1.13	1.02	1.04	1.20	1.22	1.04	1.19	1.70	1.69	2.26	1.21	1.09	0.94	1.28
First Capital Connect	1.02	1.05	0.82	0.81	0.79	0.77	1.15	1.08	1.36	2.31	1.31	1.41	0.94	1.11
CrossCountry	1.25	1.26	1.42	1.50	1.10	1.31	1.21	1.70	1.34	2.84	1.31	1.32	1.33	1.43
London Midland	1.92	1.68	2.05	1.92	1.30	1.56	1.36	1.97	1.86	2.91	2.03	1.74	1.58	1.83
London Overground	2.18	2.38	2.09	1.68	1.51	1.98	1.91	2.39	3.18	4.05	3.32	2.16	2.28	2.36
East Midlands Trains	0.88	1.07	1.24	1.25	1.11	1.13	1.11	1.58	1.61	1.46	1.21	1.13	1.17	1.22
First ScotRail	0.93	1.06	1.00	1.19	0.83	0.95	1.14	1.45	1.69	4.15	1.35	1.52	1.31	1.39
East Coast	0.74	0.66	0.74	1.03	0.58	1.07	0.65	0.96	1.13	2.09	0.81	0.97	0.79	0.93
Merseyrail	0.54	0.59	0.64	0.36	0.47	0.84	0.53	0.60	0.80	1.21	0.43	0.62	0.47	0.62
Virgin Trains	1.93	1.42	1.40	1.21	1.03	1.10	0.71	1.23	1.58	2.37	1.68	1.11	0.95	1.36
Arriva Trains Wales	0.92	0.84	1.31	1.08	0.93	0.75	0.82	1.22	1.64	2.00	1.04	0.88	0.88	1.09
Chiltern Railways	0.90	0.51	0.82	1.08	0.46	0.60	0.64	0.83	0.59	0.83	0.68	1.12	0.65	0.75
c2c Rail	0.52	0.36	0.58	0.88	0.53	0.93	0.43	0.34	0.33	0.57	0.52	0.31	0.39	0.52
Southeastern	0.85	1.21	1.17	1.24	0.78	1.02	1.46	2.52	2.02	5.78	2.29	2.53	1.23	1.83
Southern	1.15	1.52	0.82	1.39	1.18	1.42	1.54	1.78	2.37	5.15	2.62	1.58	1.32	1.78
Stagecoach South Western	0.94	1.13	0.67	1.00	0.76	0.74	0.71	1.18	2.04	2.75	1.62	0.91	0.85	1.16
Open Access Operators														
Grand Central	1.26	1.21	1.22	1.23	0.87	1.46	1.05	1.55	1.59	4.24	1.34	1.69	1.19	1.54
Wrexham & Shropshire	1.67	1.54	1.33	1.36	0.95	1.25	1.11	1.94	1.10	2.66	1.73	1.43	1.33	1.49
Heathrow Express	1.50	0.61	0.84	1.31	1.14	0.65	1.67	0.77	0.87	1.19	1.48	0.72	1.04	1.06
First Hull Trains	1.45	1.34	0.96	1.43	0.73	1.04	0.97	1.00	2.01	2.21	0.88	0.97	0.77	1.21
Total Passenger	1.22	1.17	1.24	1.30	1.00	1.13	1.16	1.62	1.76	3.09	1.56	1.35	1.15	1.42
Applicable Freight Operators														
DB Schenker	3.30	3.19	3.63	3.12	2.89	3.17	3.29	4.22	4.83	9.27	4.43	4.59	4.13	4.00
Freightliner Intermodal	4.83	4.30	4.48	4.58	4.18	3.55	3.22	3.99	4.62	8.16	5.27	5.93	3.81	4.62
Freightliner Heavyhaul	3.20	3.20	3.90	3.57	2.44	2.62	3.11	3.81	3.80	8.51	4.53	4.53	3.46	3.77
First GB Railfreight	4.19	2.81	3.79	4.57	3.06	4.37	3.50	3.85	4.30	5.81	4.86	5.02	3.79	4.16
Direct Rail Services	2.20	2.22	2.34	1.23	2.55	1.56	1.15	2.61	2.89	6.59	2.10	2.41	1.72	2.38
Total	**3.61**	**3.35**	**3.80**	**3.50**	**3.11**	**3.16**	**3.13**	**3.96**	**4.46**	**8.40**	**4.57**	**4.81**	**3.80**	**4.02**

The following table (Table 1.11) shows the combined train delay minutes for each operating route per period.

Table 1.11: Delay minutes to all trains split by Route and by four-weekly period – 2009/10 (including minor operators)

	Sussex	*Wessex*	*Western*	*LNE*	*Anglia*	*Scotland*	*Kent*	*LNW*	*M&C*	*Network total*
P1	29,538	36,220	73,958	96,084	85,999	42,347	30,291	200,447	22,594	617,477
P2	32,301	40,202	59,234	76,756	51,229	40,092	34,600	150,515	29,458	514,388
P3	18,790	26,049	72,474	99,802	82,894	39,180	32,172	167,395	28,481	567,237
P4	35,431	33,377	73,845	94,328	93,044	46,463	33,395	149,482	24,744	584,108
P5	32,410	28,649	71,240	64,383	47,055	31,560	21,795	131,340	26,915	455,347
P6	36,020	27,523	58,702	82,979	67,688	39,390	26,915	139,737	24,489	503,442
P7	37,863	27,865	77,100	93,235	62,772	41,614	43,017	108,663	25,439	517,569
P8	39,768	48,892	93,682	114,483	73,968	53,518	67,575	185,633	29,143	706,662
P9	52,959	72,684	102,091	114,543	91,487	64,049	55,593	176,918	35,034	765,358
P10	117,666	89,404	119,432	157,012	131,121	152,714	122,193	220,657	23,817	1,134,016
P11	60,992	59,648	75,743	98,955	71,603	50,600	71,176	187,308	26,765	702,790
P12	35,511	35,669	71,299	107,417	68,294	56,622	79,976	155,057	28,859	638,705
P13	26,922	27,205	57,390	83,502	57,796	43,804	33,979	117,687	29,414	477,699
Year total	**556,171**	**553,386**	**1,006,190**	**1,283,480**	**984,949**	**701,953**	**652,676**	**2,090,840**	**355,151**	**8,184,797**

Period dates:

P1: Wednesday 01 April 2009 − Saturday 25 April 2009
P2: Sunday 26 April 2009 − Saturday 23 May 2009
P3: Sunday 24 May 2009 – Saturday 20 June 2009
P4: Sunday 21 June 2009 – Saturday 18 July 2009
P5: Sunday 19 July 2009 – Saturday 15 August 2009
P6: Sunday 16 August 2009 – Saturday 12 September 2009
P7: Sunday 13 September 2009 – Saturday10 October 2009
P8: Sunday 11 October 2009 – Saturday 07 November 2009
P9: Sunday 08 November 2009 – Saturday 05 December 2009
P10: Sunday 06 December 2009 – Saturday 02 January 2010
P11: Sunday 03 January 2010 – Saturday 30 January 2010
P12: Sunday 31 January 2010 – Saturday 27 February 2010
P13: Sunday 28 February 2010 − Wednesday 31 March 2010

Network-wide data by delay category grouping

The trends in delay minutes by broad category groupings are shown below, followed by a commentary focusing on these groups and the individual delay categories.

Commentary

In 2009/10, delays caused by Network Rail's infrastructure and operations improved by 14 per cent reflecting the extensive performance improvement schemes and processes in place. However, delays caused by adverse weather and external events worsened compared to the previous year by 12 per cent. The improvement was driven by substantial reductions in delay in each of the 'Track defects/TSRs, 'Other asset defects', 'Network management/other', 'Autumn Leaf-fall and adhesion' and 'External factors' category groups (see Tables 1.12 and 1.13 below). Compared to 2008/09:

- the Network management /other category fell by 363,905 minutes (16 per cent better);
- track defects and TSRs fell by 244,952 minutes (23 per cent better);
- other asset defects fell by 213,466 minutes (seven per cent better);
- external factors fell by 139,431 minutes (eight per cent better); and
- autumn leaf-fall and adhesion fell by 88,504 minutes (37 per cent better).

Table 1.12: Network delays to passenger and freight trains by summarised category groups (Delay minutes)[1]

Category group[2]	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Track defects and TSRs[3]	1,511,662	1,645,279	1,368,171	1,238,050	1,062,288	817,336
Other asset defects[4]	3,674,533	3,395,679	3,350,439	2,870,303	2,883,048	2,669,582
Network management/other[5]	3,501,185	2,986,311	2,746,575	2,634,263	2,331,438	1,967,533
Autumn leaf-fall and adhesion[6]	260,487	285,363	214,222	156,813	241,733	153,229
Severe weather/structures[7]	803,444	477,833	1,024,655	882,648	584,241	979,852
External factors[8]	1,617,636	1,633,065	1,787,843	1,676,215	1,673,932	1,534,501
Total minutes	11,368,947	10,423,531	10,491,906	9,458,292	8,776,680	8,122,033
Train km	474,348,482	484,252,823	484,382,470	482,972,113	493,884,828	506,110,414

Table 1.13: Network delays to passenger and freight trains by summarised category groups (Delay mins. per 100 train km)[1]

Category group[2]	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Track defects and TSRs[3]	0.32	0.34	0.28	0.26	0.22	0.16
Other asset defects[4]	0.77	0.70	0.69	0.59	0.58	0.53
Network management/other[5]	0.74	0.62	0.57	0.55	0.47	0.39
Autumn leaf-fall and adhesion[6]	0.05	0.06	0.04	0.03	0.05	0.03
Severe weather/structures[7]	0.17	0.10	0.21	0.18	0.12	0.19
External factors[8]	0.34	0.34	0.37	0.35	0.34	0.30
Total	**2.40**	**2.15**	**2.17**	**1.96**	**1.78**	**1.60**

Notes:

1. To improve the quality of information for performance improvement purposes, some minor changes to the definition of delay category have occurred since the 2009 Annual Return. The previous category 301B (Track circuit failures) has been split to identify axle counter failures as a separate category (301C). This is an alternative method of train detection forming part of the signalling systems, and has become more widespread in use in recent years. The second material change is combining the relatively small category 304A (Change of aspects-no fault found) into 302B (Other signal equipment failures).
2. Delay totals are based on all delays recorded for attribution of responsibility to Network Rail, divided by train kilometres run where applicable;
3. Track defects and TSRs include broken rails, other track faults, speed restrictions for condition of track and rolling contact fatigue, and reactionary delay to planned TSRs;
4. Other asset defects include points, track circuits, axle counters, signal and signalling system failures, overhead power/third rail supply etc.;
5. Network management/other delays include possessions, signalling errors, timetabling, dispute resolution and unexplained;
6. Autumn leaf fall and adhesion include leaf fall related delays and Network Rail's share of industry adhesion delays;
7. Severe weather/structures includes direct delays due to severe weather and all structures delays, which include weather related delays due to embankment instability risks and bridge scour. Heat-related speed restrictions are also shown within this category;
8. External factors include road-related incidents, fires, trespass and vandalism, cable theft, security alerts, suicides and other external events.

These were offset by an increase in delays for 'Severe weather/ structures' which saw an increase of 395,611 minutes (+68 per cent) reflecting the severe winter weather conditions compounding some localised extreme flooding earlier in the year (e.g. Cumbria and south west Scotland).

At an individual category level (see Tables 1.14 to 1.16), the most significant improvements (in absolute minute terms) were as follows:

- track faults (including broken rails) fell by 113,174 minutes (16 per cent better);
- point failures fell by 86,414 minutes (12 per cent better); and
- TSRs due to condition of track fell by 70,835 minutes (35 per cent better).

By contrast, the largest increases in delay were in the following categories:

- severe weather (beyond design capability infrastructure) increased by 463,414 minutes (134 per cent worse);
- overhead line/ third rail faults increased by 33,217 minutes (16 per cent worse); and
- cable faults (signalling and comms) increased by 24,870 minutes (17 per cent worse).

In overall terms, analysis of performance before the winter period indicated that improved punctuality was the result primarily of better general delivery rather than the impact of specific improvement schemes. For example, continued focus on TSR removal was creating extra recovery capability in timetables resulting in less delay from incidents caused by other failures and other improvements in PPM. At the same time there was a reduction in external delay and the impact of possessions, the latter in part reflecting better quality possessions management. Beyond this, the impact of autumn was much reduced compared to recent autumns with a national period PPM during autumn in excess of 90 per cent for the first time ever.

Analysis and operational feedback further indicates that the combination of all the improvements generated a reduction in overall workload in controls and other management centres, sufficient that this enabled higher quality decisions on service management during disruption. On the West Coast Main Line, a concerted programme of reliability improvements also contributed to a marked increase in performance levels during the summer and early part of the autumn.

Many of these improvements were disrupted during the winter period. Problems during this period are most visible in the severe weather categories, but the overall impact was much deeper with weather affected failures in infrastructure and fleet – both immediate and through a need for prolonged service in hard working conditions creating backlogs in maintenance. At the same time, a deterioration was seen in other categories not normally expected to deteriorate in the winter season including cable thefts as the value of copper increased rapidly during the early part of 2010.

Table 1.14: Network wide delays to passenger and freight trains by detailed cause category 2009/10 (delay minutes)

		Passenger Trains		*Freight Trains*		*Combined Total*	
No	***Category***	***Delay Mins***	***Delay per 100tr. km***	***Delay Mins***	***Delay per 100tr km***	***Delay Mins***	***Delay per 100tr km***
101	Points failures	528,212	0.11	129,671	0.37	657,883	0.13
102	Problems with trackside signs including TSR boards	15,922	0.00	1,642	0.00	17,564	0.00
103	Level crossing failures	85,064	0.02	10,176	0.03	95,240	0.02
104A	TSR's Due to Condition of Track	71,996	0.02	62,000	0.18	133,996	0.03
104B	Track faults (including broken rails)	491,349	0.10	123,193	0.35	614,542	0.12
104C	Rolling Contact Fatigue	8,687	0.00	3,180	0.01	11,867	0.00
104D	Reactionary delay to planned TSRs	45,428	0.01	11,503	0.03	56,932	0.01
105	Civil Engineering structures, earthworks & buildings	61,292	0.01	16,997	0.05	78,289	0.02
106	Other infrastructure	100,084	0.02	21,067	0.06	121,152	0.02
106A	Track Patrols & related possessions	27,853	0.01	5,840	0.02	33,693	0.01
107A	Possession over-run and related faults	103,445	0.02	28,879	0.08	132,324	0.03
107B	Other possession related delay	27,960	0.01	7,790	0.02	35,750	0.01
108	Mishap – infrastructure causes	131,096	0.03	22,484	0.06	153,580	0.03
109	Animals on line	78,586	0.02	8,235	0.02	86,821	0.02
110A	Severe weather	677,540	0.14	132,719	0.37	810,259	0.16
110B	Other weather	84,279	0.02	7,025	0.02	91,304	0.02
111A	Wheel slip due to leaf fall	38,704	0.01	6,406	0.02	45,110	0.01
111B	Vegetation Management failure	23,034	0.00	1,989	0.01	25,023	0.00
112	Fires starting on Network Rail infrastructure	31,044	0.01	1,240	0.00	32,284	0.01
150	Low adhesion inc. Autumn (Network Rail)	88,407	0.02	5,816	0.02	94,223	0.02
201	Overhead line/third rail faults	203,111	0.04	44,397	0.13	247,508	0.05
301A	Signal failures	214,579	0.05	28,082	0.08	242,661	0.05
301B	Track Circuit failures	453,846	0.10	60,254	0.17	514,100	0.10
301C	Axle counter failures	92,750	0.02	13,074	0.04	105,824	0.02
302A	Signalling System & Power Supply failures	353,515	0.08	63,065	0.18	416,581	0.08
302B	Other signal equipment failures	52,390	0.01	12,162	0.03	64,552	0.01
303	Telecoms failures	58,697	0.01	11,128	0.03	69,825	0.01
304	Cable faults (signalling & comms)	133,171	0.03	35,416	0.10	168,587	0.03
305	Track circuit failures – leaf-fall	11,710	0.00	2,186	0.01	13,896	0.00
401	Bridge strikes	129,881	0.03	13,686	0.04	143,567	0.03
402	External infrastructure damage – Vandalism/Theft	350,198	0.07	123,196	0.35	473,394	0.09
403	External level crossing/road incidents (not bridges)	61,589	0.01	8,732	0.02	70,320	0.01
501A	Network Rail Operations – signalling	315,298	0.07	47,692	0.13	362,990	0.07
501B	Network Rail Operations – control	40,979	0.01	24,948	0.07	65,927	0.01
501C	Network Rail Operations – railhead conditioning trains	25,622	0.01	2,681	0.01	28,303	0.01
501D	Network Rail Operations – other	95,826	0.02	23,701	0.07	119,526	0.02
502A	Timetable Planning	146,501	0.03	96,963	0.27	243,465	0.05
502C	Network Rail commercial takeback/other	229,229	0.05	68,906	0.19	298,135	0.06
503	External fatalities and trespass	529,231	0.11	75,836	0.21	605,067	0.12
504	External police on line/security alerts	22,124	0.00	1,804	0.01	23,929	0.00
505	External fires	43,555	0.01	4,260	0.01	47,815	0.01
506	External other	117,733	0.03	20,392	0.06	138,125	0.03
601	Unexplained	299,179	0.06	30,921	0.09	330,101	0.07
Total Minutes		**6,700,700**	**1.42**	**1,421,333**	**4.02**	**8,122,033**	**1.60**
Train Kilometres		**470,714,609**		**35,395,805**		**506,110,414**	

Table 1.15: Network total delays to passenger and freight trains by detailed cause category (delay minutes)

No	*Category*	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
101	Points failures	882,872	834,976	829,316	729,623	744,297	657,883
102	Problems with trackside signs including TSR boards	61,106	43,132	41,673	41,779	26,232	17,564
103	Level crossing failures	134,181	126,421	115,817	107,863	100,534	95,240
104A	TSR's Due to Condition of Track	530,427	566,211	347,642	284,200	204,831	133,996
104B	Track faults (including broken rails)	849,711	925,259	924,108	835,024	727,716	614,542
104C	Rolling Contact Fatigue	19,046	14,477	9,253	15,616	22,450	11,867
104D	Reactionary delay to planned TSRs	112,478	139,332	87,168	103,210	107,291	56,932
105	Civil Engineering structures, earthworks & buildings	153,316	103,647	124,324	126,433	77,833	78,289
106	Other infrastructure	250,474	233,188	202,337	236,102	187,503	121,152
106A	Track Patrols & related possessions	120,225	94,339	81,290	77,838	67,900	33,693
107A	Possession over-run and related faults	305,121	256,586	277,269	271,206	155,781	132,324
107B	Other possession related delay	95,636	90,826	85,259	58,846	51,267	35,750
108	Mishap – infrastructure causes	142,320	124,441	160,143	160,757	194,577	153,580
109	Animals on line	148,178	141,102	152,548	115,328	112,347	86,821
110A	Severe weather (beyond design capability of infrastructure)	456,217	243,014	578,610	626,972	346,845	810,259
110B	Other weather (impact on infrastructure or network operation)	193,910	131,172	321,721	129,243	159,563	91,304
111A	Wheel slip due to leaf fall	60,966	68,367	51,160	54,085	76,451	45,110
111B	Vegetation Management failure	18,734	11,709	13,056	16,289	22,836	25,023
112	Fires starting on Network Rail infrastructure	45,887	41,766	33,513	26,613	16,920	32,284
150	Low adhesion inc. Autumn (Network Rail)	178,960	195,089	148,957	97,544	142,690	94,223
201	Overhead line/third rail faults	292,970	244,346	336,596	214,086	214,291	247,508
301A	Signal failures	434,036	390,671	345,314	288,006	308,811	242,661
301B	Track Circuit failures	979,332	913,227	768,844	638,878	556,595	514,100
301C	Axle counter failures	79,440	72,308	49,517	77,458	142,373	105,824
302A	Signalling System & Power Supply failures	410,155	368,535	434,195	391,769	431,539	416,581
302B	Other signal equipment failures	122,048	84,349	91,911	67,560	62,157	64,552
303	Telecoms failures	50,019	63,825	50,901	66,026	66,387	69,825
304	Cable faults (signalling & comms)	141,302	155,919	175,480	173,706	143,717	168,587
305	Track circuit failures – leaf fall	20,561	21,907	14,105	5,184	22,592	13,896
401	Bridge strikes	324,015	245,463	255,753	221,268	171,195	143,567
402	External infrastructure damage– Vandalism/Theft	319,781	338,433	504,472	473,606	503,286	473,394
403	External level crossing/road incidents (not bridges)	92,057	89,014	80,857	79,180	76,050	70,320
501A	Network Rail Operations – signalling	554,192	497,331	456,276	454,885	407,013	362,990
501B	Network Rail Operations – control	93,116	91,149	88,754	86,460	83,925	65,927
501C	Network Rail Operations – railhead conditioning trains	27,867	28,671	18,810	26,031	24,003	28,303
501D	Network Rail Operations – other	219,297	153,196	172,499	207,412	175,761	119,526
502A	Timetable Planning	487,393	429,521	316,823	281,035	241,090	243,465
502C	Network Rail commercial takeback/other	755,033	596,721	513,787	379,912	340,003	298,135
503	External fatalities and trespass	554,319	641,675	610,890	624,978	653,119	605,067
504	External police on line/security alerts	42,452	83,460	45,421	47,611	17,343	23,929
505	External fires	56,553	69,421	88,171	82,075	31,940	47,815
506	External other	182,572	123,833	168,766	120,884	204,079	138,125
601	Unexplained	370,670	335,502	318,599	335,711	353,547	330,101
Total Minutes		**11,368,947**	**10,423,531**	**10,491,906**	**9,458,292**	**8,776,680**	**8,122,033**
Train Kilometres		474,348,482	484,252,823	484,382,470	482,972,113	493,884,828	506,110,414

Table 1.16: Network total delays to passenger and freight trains by detailed cause category (delay minutes per 100 train km)

No	*Category*	*2004/05*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
101	Points failures	0.19	0.17	0.17	0.15	0.15	0.13
102	Problems with trackside signs including TSR boards	0.01	0.01	0.01	0.01	0.01	0.00
103	Level crossing failures	0.03	0.03	0.02	0.02	0.02	0.02
104A	TSR's Due to Condition of Track	0.11	0.12	0.07	0.06	0.04	0.03
104B	Track faults (including broken rails)	0.18	0.19	0.19	0.17	0.15	0.12
104C	Rolling Contact Fatigue	0.00	0.00	0.00	0.00	0.00	0.00
104D	Reactionary delay to planned TSRs	0.02	0.03	0.02	0.02	0.02	0.01
105	Civil Engineering structures, earthworks & buildings	0.03	0.02	0.03	0.03	0.02	0.02
106	Other infrastructure	0.05	0.05	0.04	0.05	0.04	0.02
106A	Track Patrols & related possessions	0.03	0.02	0.02	0.02	0.01	0.01
107A	Possession over-run and related faults	0.06	0.05	0.06	0.06	0.03	0.03
107B	Other possession related delay	0.02	0.02	0.02	0.01	0.01	0.01
108	Mishap – infrastructure causes	0.03	0.03	0.03	0.03	0.04	0.03
109	Animals on line	0.03	0.03	0.03	0.02	0.02	0.02
110A	Severe weather	0.10	0.05	0.12	0.13	0.07	0.16
110B	Other weather	0.04	0.03	0.07	0.03	0.03	0.02
111A	Wheel slip due to leaf fall	0.01	0.01	0.01	0.01	0.02	0.01
111B	Vegetation Management failure	0.00	0.00	0.00	0.00	0.00	0.00
112	Fires starting on Network Rail infrastructure	0.01	0.01	0.01	0.01	0.00	0.01
150	Low adhesion inc. Autumn (Network Rail)	0.04	0.04	0.03	0.02	0.03	0.02
201	Overhead line/third rail faults	0.06	0.05	0.07	0.04	0.04	0.05
301A	Signal failures	0.09	0.08	0.07	0.06	0.06	0.05
301B	Track Circuit failures	0.21	0.19	0.16	0.13	0.11	0.10
301C	Axle counter failures	0.02	0.01	0.01	0.02	0.03	0.02
302A	Signalling System & Power Supply failures	0.09	0.08	0.09	0.08	0.09	0.08
302B	Other signal equipment failures	0.03	0.02	0.02	0.01	0.01	0.01
303	Telecoms failures	0.01	0.01	0.01	0.01	0.01	0.01
304	Cable faults (signalling & comms)	0.03	0.03	0.04	0.04	0.03	0.03
305	Track circuit failures – leaf-fall	0.00	0.00	0.00	0.00	0.00	0.00
401	Bridge strikes	0.07	0.05	0.05	0.05	0.03	0.03
402	External infrastructure damage– Vandalism/Theft	0.07	0.07	0.10	0.10	0.10	0.09
403	External level crossing/road incidents (not bridges)	0.02	0.02	0.02	0.02	0.02	0.01
501A	Network Rail Operations – signalling	0.12	0.10	0.09	0.09	0.08	0.07
501B	Network Rail Operations – control	0.02	0.02	0.02	0.02	0.02	0.01
501C	Network Rail Operations – railhead conditioning trains	0.01	0.01	0.00	0.01	0.00	0.01
501D	Network Rail Operations – other	0.05	0.03	0.04	0.04	0.04	0.02
502A	Timetable Planning	0.10	0.09	0.07	0.06	0.05	0.05
502C	Network Rail commercial takeback / other	0.16	0.12	0.11	0.08	0.07	0.06
503	External fatalities and trespass	0.12	0.13	0.13	0.13	0.13	0.12
504	External police on line/security alerts	0.01	0.02	0.01	0.01	0.00	0.00
505	External fires	0.01	0.01	0.02	0.02	0.01	0.01
506	External other	0.04	0.03	0.03	0.03	0.04	0.03
601	Unexplained	0.08	0.07	0.07	0.07	0.07	0.07
Total Minutes		**2.40**	**2.15**	**2.17**	**1.96**	**1.78**	**1.60**

Results for operating routes by delay category

Commentary on operating routes

The delays by cause category across Network Rail's nine routes are shown in Tables 1.17 to 1.25. These show delays to passenger and freight services, and delay per 100 train kilometres. From these, it can be seen that:

- overall delay per 100 train km is highest on Anglia (2.17 minutes per 100 train km) and lowest on Wessex (1.23 minutes per 100 train km). Kent is the only other Route with delay exceeding two minutes per 100 km in 2009/10 having increased as a result of the sharp increase in weather related delay;
- track delays have improved significantly on London North Eastern, with a result that it now accounts for 25 per cent of the network total for track; this is down from 33 per cent last year. London North Western is the other route with a high proportion of track delays, accounting for 24 per cent of the total;
- London North Western accounts for 32 per cent of all delay due to points and signalling, down from 38 per cent in 2008/09 as a result of a 23 per cent improvement in delays on the Route, with the benefit of reliability improvements on the West Coast Main Line;
- external delays remain at 19 per cent of all Network Rail delays across the network. This proportion varies from 23 per cent in LNE, 22 per cent in both Western and Midland & Continental, down to nine per cent in Scotland. Relative to the size of the route (in terms of train km in each route), the impact of the external delays is highest in Anglia, which was hit particularly hard by a combination of high levels of delay for external fatalities and trespass (category number 503) and external vandalism / theft (category number 402);
- autumn delays represented three per cent of route delays in Wessex last year. This was the highest proportion of any route, and compares with a national average of two per cent; and
- these shares need to be set in the context of geographic differences in traffic flows and infrastructure, as well as the overall level of traffic on each route. We operate the most mileage on London North Western (25 per cent), followed by London North Eastern (16 per cent). By contrast Midland & Continental operates five per cent, while Sussex and Kent each operate six per cent of national train miles.

Overall delay to major operators in Scotland increased by 91,969 minutes compared to the previous year. This was more than accounted for by the increase of 129,749 minutes in the severe weather / structures categories. External causes of delay increased marginally. By contrast, infrastructure and other operational causes overall saw an improvement in delay minutes, with improvements in track, points and track circuit failures. Only one infrastructure category, (number 304, cable faults), showed a material increase, rising to 25,958 minutes.

Supporting notes for Tables 1.17 to 1.25:

1. Figures shown in this chapter for overall train km run includes a small amount of mileage not on Network Rail core infrastructure (e.g. HS1, LUL and BAA infrastructure). The train mileage for the individual routes in the following tables excludes this mileage.
2. The split of train km by Route is sourced from a new system in 2009/10. Due to different data definitions and processes, there are some differences compared with the split of mileage shown in the 2009 Annual Return and the figures are therefore not directly comparable.

Table 1.17: Western delays to passenger and freight trains by detailed cause 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	85,871	24,363	110,234	0.16
102	Problems with trackside signs including TSR boards	2,622	69	2,691	0.00
103	Level crossing failures	14,514	1,297	15,811	0.02
104A	TSR's Due to Condition of Track	0	0	0	–
104B	Track faults (including broken rails)	42,861	8,198	51,059	0.07
104C	Rolling Contact Fatigue	290	5	295	0.00
104D	Reactionary delay to planned TSRs	3,476	710	4,186	0.01
105	Civil Engineering structures, earthworks & buildings	8,945	2,746	11,691	0.02
106	Other infrastructure	14,396	5,111	19,507	0.03
106A	Track Patrols & related possessions	5,249	568	5,817	0.01
107A	Possession over-run and related faults	16,910	7,004	23,914	0.03
107B	Other possession related delay	338	3	341	0.00
108	Mishap – infrastructure causes	9,317	2,335	11,652	0.02
109	Animals on line	15,192	2,044	17,236	0.02
110A	Severe weather	7,076	11,104	48,180	0.07
110B	Other weather	8,188	2,179	10,367	0.01
111A	Wheel slip due to leaf fall	5,002	1,238	6,240	0.01
111B	Vegetation Management failure	3,765	552	4,317	0.01
112	Fires starting on Network Rail infrastructure	74	0	74	0.00
150	Low adhesion inc. Autumn (Network Rail)	7,589	747	8,335	0.01
201	Overhead line/third rail faults	491	0	491	0.00
301A	Signal failures	40,252	6,210	46,462	0.07
301B	Track Circuit failures	86,283	13,133	99,417	0.14
301C	Axle counter failures	6,978	2,063	9,041	0.01
302A	Signalling System & Power Supply failures	33,793	6,794	40,587	0.06
302B	Other signal equipment failures	14,290	1,947	16,237	0.02
303	Telecoms failures	12,144	2,263	14,407	0.02
304	Cable faults (signalling & comms)	6,866	907	7,773	0.01
305	Track circuit failures – leaf-fall	1,284	83	1,367	0.00
401	Bridge strikes	17,476	1,219	18,695	0.03
402	External infrastructure damage – Vandalism/Theft	45,197	15,800	60,997	0.09
403	External level crossing/road incidents (not bridges)	10,022	782	10,804	0.02
501A	Network Rail Operations – signalling	40,410	6,630	47,040	0.07
501B	Network Rail Operations – control	3,690	2,095	5,785	0.01
501C	Network Rail Operations – railhead conditioning trains	3,187	550	3,737	0.01
501D	Network Rail Operations – other	12,744	3,023	15,767	0.02
502A	Timetable Planning	21,053	12,555	33,608	0.05
502C	Network Rail commercial takeback / other	27,318	12,402	39,720	0.06
503	External fatalities and trespass	91,013	15,685	106,698	0.15
504	External police on line/security alerts	2,611	270	2,880	0.00
505	External fires	4,373	233	4,606	0.01
506	External other	13,264	3,351	16,615	0.02
601	Unexplained	38,486	4,069	42,554	0.06
Total		**814,898**	**182,336**	**997,234**	**1.42**
Train Kilometres					**70,455,602**

Table 1.18: London North Eastern delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	46,878	20,639	67,517	0.09
102	Problems with trackside signs including TSR boards	2,441	354	2,795	0.00
103	Level crossing failures	19,162	4,657	23,819	0.03
104A	TSR's Due to Condition of Track	15,907	22,690	38,597	0.05
104B	Track faults (including broken rails)	108,520	48,339	156,859	0.20
104C	Rolling Contact Fatigue	1,053	1,746	2,799	0.00
104D	Reactionary delay to planned TSRs	3,488	1,891	5,379	0.01
105	Civil Engineering structures, earthworks & buildings	6,136	3,691	9,827	0.01
106	Other infrastructure	9,560	2,270	11,830	0.02
106A	Track Patrols & related possessions	1,632	852	2,484	0.00
107A	Possession over-run and related faults	16,090	7,323	23,413	0.03
107B	Other possession related delay	2,020	1,032	3,052	0.00
108	Mishap – infrastructure causes	25,931	5,992	31,922	0.04
109	Animals on line	12,373	1,372	13,746	0.02
110A	Severe weather (beyond design capability of infrastructure)	85,595	25,751	111,346	0.14
110B	Other weather (impact on infrastructure or network operation)	8,723	641	9,364	0.01
111A	Wheel slip due to leaf fall	4,698	1,246	5,943	0.01
111B	Vegetation Management failure	1,468	114	1,582	0.00
112	Fires starting on Network Rail infrastructure	1,865	168	2,033	0.00
150	Low adhesion inc. Autumn (Network Rail)	18,252	696	18,947	0.02
201	Overhead line/third rail faults	28,834	1,576	30,410	0.04
301A	Signal failures	25,462	3,970	29,432	0.04
301B	Track Circuit failures	32,794	7,953	40,747	0.05
301C	Axle counter failures	1,547	73	1,620	0.00
302A	Signalling System & Power Supply failures	55,849	13,258	69,107	0.09
302B	Other signal equipment failures	6,682	1,957	8,639	0.01
303	Telecoms failures	12,623	2,861	15,484	0.02
304	Cable faults (signalling & comms)	23,897	7,687	31,584	0.04
305	Track circuit failures – leaf-fall	1,865	834	2,699	0.00
401	Bridge strikes	14,712	2,846	17,558	0.02
402	External infrastructure damage – Vandalism/Theft	93,524	38,547	132,072	0.17
403	External level crossing/road incidents (not bridges)	14,447	2,661	17,108	0.02
501A	Network Rail Operations – signalling	32,327	9,194	41,521	0.05
501B	Network Rail Operations – control	3,595	5,008	8,604	0.01
501C	Network Rail Operations – railhead conditioning trains	966	230	1,196	0.00
501D	Network Rail Operations – other	22,195	5,791	27,987	0.04
502A	Timetable Planning	11,197	14,850	26,047	0.03
502C	Network Rail commercial takeback / other	32,289	11,604	43,893	0.06
503	External fatalities and trespass	75,852	14,038	89,890	0.11
504	External police on line/security alerts	1,453	272	1,725	0.00
505	External fires	1,788	697	2,485	0.00
506	External other	23,015	4,139	27,154	0.03
601	Unexplained	50,652	8,329	58,981	0.08
Total		**959,357**	**309,840**	**1,269,196**	**1.62**
Train Kilometres					**78,584,120**

Table 1.19: London North Western delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	162,343	46,304	208,647	0.17
102	Problems with trackside signs including TSR boards	4,138	658	4,796	0.00
103	Level crossing failures	7,912	359	8,271	0.01
104A	TSR's Due to Condition of Track	15,695	29,047	44,742	0.04
104B	Track faults (including broken rails)	107,105	21,426	128,531	0.10
104C	Rolling Contact Fatigue	345	218	563	0.00
104D	Reactionary delay to planned TSRs	19,690	4,050	23,740	0.02
105	Civil Engineering structures, earthworks & buildings	8,335	859	9,194	0.01
106	Other infrastructure	9,293	1,720	11,012	0.01
106A	Track Patrols & related possessions	3,291	676	3,967	0.00
107A	Possession over-run and related faults	15,841	3,471	19,312	0.02
107B	Other possession related delay	10,215	3,696	13,911	0.01
108	Mishap – infrastructure causes	30,840	4,275	35,115	0.03
109	Animals on line	17,905	1,694	19,599	0.02
110A	Severe weather (beyond design capability of infrastructure)	102,000	30,756	132,755	0.11
110B	Other weather (impact on infrastructure or network operation)	10,065	1,645	11,710	0.01
111A	Wheel slip due to leaf fall	7,603	1,499	9,102	0.01
111B	Vegetation Management failure	2,808	313	3,121	0.00
112	Fires starting on Network Rail infrastructure	727	0	727	0.00
150	Low adhesion inc. Autumn (Network Rail)	27,375	2,527	29,902	0.02
201	Overhead line/third rail faults	70,719	32,618	103,337	0.08
301A	Signal failures	59,178	8,234	67,412	0.05
301B	Track Circuit failures	116,499	18,239	134,739	0.11
301C	Axle counter failures	70,307	8,783	79,090	0.06
302A	Signalling System & Power Supply failures	110,201	27,260	137,461	0.11
302B	Other signal equipment failures	14,987	4,313	19,300	0.02
303	Telecoms failures	2,811	227	3,038	0.00
304	Cable faults (signalling & comms)	34,479	13,695	48,174	0.04
305	Track circuit failures – leaf-fall	52	3	55	0.00
401	Bridge strikes	32,304	4,351	36,655	0.03
402	External infrastructure damage – Vandalism/Theft	127,601	48,755	176,356	0.14
403	External level crossing/road incidents (not bridges)	7,947	325	8,272	0.01
501A	Network Rail Operations – signalling	59,198	10,997	70,195	0.06
501B	Network Rail Operations – control	5,005	3,481	8,487	0.01
501C	Network Rail Operations – railhead conditioning trains	4,456	615	5,071	0.00
501D	Network Rail Operations – other	15,040	6,242	21,281	0.02
502A	Timetable Planning	34,465	17,808	52,273	0.04
502C	Network Rail commercial takeback / other	56,388	21,180	77,568	0.06
503	External fatalities and trespass	123,716	20,431	144,146	0.12
504	External police on line/security alerts	9,683	280	9,963	0.01
505	External fires	7,651	2,102	9,753	0.01
506	External other	24,016	2,803	26,819	0.02
601	Unexplained	97,680	11,212	108,892	0.09
Total		**1,647,909**	**419,145**	**2,067,054**	**1.67**
Train Kilometres					**123,794,740**

Table 1.20: Scotland delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	47,167	7,777	54,944	0.11
102	Problems with trackside signs including TSR boards	1,807	294	2,101	0.00
103	Level crossing failures	5,770	505	6,275	0.01
104A	TSR's Due to Condition of Track	94	939	1,033	0.00
104B	Track faults (including broken rails)	21,723	6,388	28,111	0.06
104C	Rolling Contact Fatigue	0	0	0	–
104D	Reactionary delay to planned TSRs	3,899	1,467	5,366	0.01
105	Civil Engineering structures, earthworks & buildings	7,409	6,595	14,004	0.03
106	Other infrastructure	3,378	556	3,934	0.01
106A	Track Patrols & related possessions	0	11	11	0.00
107A	Possession over-run and related faults	4,191	1,314	5,505	0.01
107B	Other possession related delay	1,599	535	2,134	0.00
108	Mishap – infrastructure causes	5,833	537	6,370	0.01
109	Animals on line	8,963	783	9,746	0.02
110A	Severe weather (beyond design capability of infrastructure)	135,871	28,477	164,348	0.33
110B	Other weather (impact on infrastructure or network operation)	6,907	414	7,320	0.01
111A	Wheel slip due to leaf fall	7,213	630	7,843	0.02
111B	Vegetation Management failure	1,904	550	2,454	0.00
112	Fires starting on Network Rail infrastructure	20	0	20	0.00
150	Low adhesion inc. Autumn (Network Rail)	4,549	746	5,295	0.01
201	Overhead line/third rail faults	5,831	994	6,825	0.01
301A	Signal failures	28,152	2,737	30,889	0.06
301B	Track Circuit failures	37,898	3,347	41,245	0.08
301C	Axle counter failures	3,124	173	3,297	0.01
302A	Signalling System & Power Supply failures	20,915	3,554	24,469	0.05
302B	Other signal equipment failures	3,662	765	4,427	0.01
303	Telecoms failures	6,494	389	6,883	0.01
304	Cable faults (signalling & comms)	22,669	3,289	25,958	0.05
305	Track circuit failures – leaf-fall	0	0	0	–
401	Bridge strikes	8,475	1,331	9,806	0.02
402	External infrastructure damage – Vandalism/Theft	8,018	1,656	9,675	0.02
403	External level crossing/road incidents (not bridges)	2,869	217	3,086	0.01
501A	Network Rail Operations – signalling	29,956	3,511	33,468	0.07
501B	Network Rail Operations – control	4,625	2,997	7,622	0.02
501C	Network Rail Operations – railhead conditioning trains	1,994	494	2,488	0.00
501D	Network Rail Operations – other	8,311	1,139	9,450	0.02
502A	Timetable Planning	5,302	4,615	9,917	0.02
502C	Network Rail commercial takeback / other	27,587	4,073	31,660	0.06
503	External fatalities and trespass	24,129	1,896	26,025	0.05
504	External police on line/security alerts	644	107	751	0.00
505	External fires	1,151	151	1,302	0.00
506	External other	11,950	1,249	13,198	0.03
601	Unexplained	68,341	2,721	71,062	0.14
Total		**600,393**	**99,923**	**700,317**	**1.40**
Train Kilometres					**49,965,568**

Table 1.21: Kent delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	54,366	2,210	56,576	0.18
102	Problems with trackside signs including TSR boards	461	42	503	0.00
103	Level crossing failures	3,335	184	3,519	0.01
104A	TSR's Due to Condition of Track	16,337	601	16,938	0.05
104B	Track faults (including broken rails)	52,512	1,617	54,130	0.17
104C	Rolling Contact Fatigue	123	0	123	0.00
104D	Reactionary delay to planned TSRs	841	0	841	0.00
105	Civil Engineering structures, earthworks & buildings	7,584	397	7,981	0.02
106	Other infrastructure	5,963	694	6,657	0.02
106A	Track Patrols & related possessions	2,895	1,312	4,207	0.01
107A	Possession over-run and related faults	12,024	1,436	13,460	0.04
107B	Other possession related delay	1,479	34	1,513	0.00
108	Mishap – infrastructure causes	19,454	223	19,677	0.06
109	Animals on line	3,447	54	3,501	0.01
110A	Severe weather (beyond design capability of infrastructure)	96,436	3,521	99,956	0.31
110B	Other weather (impact on infrastructure or network operation)	25,694	154	25,848	0.08
111A	Wheel slip due to leaf fall	3,432	1,199	4,631	0.01
111B	Vegetation Management failure	6,022	7	6,029	0.02
112	Fires starting on Network Rail infrastructure	11,618	214	11,832	0.04
150	Low adhesion inc. Autumn (Network Rail)	7,410	126	7,535	0.02
201	Overhead line/third rail faults	8,266	89	8,355	0.03
301A	Signal failures	14,131	400	14,531	0.05
301B	Track Circuit failures	58,690	1,753	60,443	0.19
301C	Axle counter failures	3	0	3	0.00
302A	Signalling System & Power Supply failures	22,283	736	23,019	0.07
302B	Other signal equipment failures	1,914	780	2,694	0.01
303	Telecoms failures	10,097	171	10,268	0.03
304	Cable faults (signalling & comms)	8,563	96	8,659	0.03
305	Track circuit failures – leaf-fall	3	0	3	0.00
401	Bridge strikes	17,682	270	17,952	0.06
402	External infrastructure damage – Vandalism/Theft	10,502	87	10,589	0.03
403	External level crossing/road incidents (not bridges)	1,539	100	1,639	0.01
501A	Network Rail Operations – signalling	50,251	1,332	51,583	0.16
501B	Network Rail Operations – control	5,545	871	6,416	0.02
501C	Network Rail Operations – railhead conditioning trains	4,934	218	5,152	0.02
501D	Network Rail Operations – other	4,303	676	4,980	0.02
502A	Timetable Planning	7,910	2,684	10,594	0.03
502C	Network Rail commercial takeback / other	15,402	1,024	16,426	0.05
503	External fatalities and trespass	25,883	1,390	27,273	0.09
504	External police on line/security alerts	124	24	148	0.00
505	External fires	16,288	117	16,405	0.05
506	External other	4,217	99	4,316	0.01
601	Unexplained	1,695	23	1,718	0.01
Total		**621,658**	**26,965**	**648,623**	**2.03**
Train Kilometres					**31,929,134**

Table 1.22: Wessex delays to passenger and freight trains by detailed cause 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	35,492	3,211	38,704	0.09
102	Problems with trackside signs including TSR boards	533	34	567	0.00
103	Level crossing failures	7,074	168	7,242	0.02
104A	TSR's Due to Condition of Track	0	0	0	–
104B	Track faults (including broken rails)	51,200	5,871	57,072	0.13
104C	Rolling Contact Fatigue	6,740	1,070	7,810	0.02
104D	Reactionary delay to planned TSRs	5,792	969	6,761	0.02
105	Civil Engineering structures, earthworks & buildings	15,170	454	15,624	0.03
106	Other infrastructure	13,612	2,031	15,643	0.03
106A	Track Patrols & related possessions	5,114	429	5,543	0.01
107A	Possession over-run and related faults	13,363	415	13,778	0.03
107B	Other possession related delay	4,570	173	4,743	0.01
108	Mishap – infrastructure causes	5,338	170	5,508	0.01
109	Animals on line	3,820	251	4,071	0.01
110A	Severe weather (beyond design capability of infrastructure)	66,678	3,483	70,161	0.16
110B	Other weather (impact on infrastructure or network operation)	2,233	243	2,475	0.01
111A	Wheel slip due to leaf fall	5,003	216	5,219	0.01
111B	Vegetation Management failure	1,401	171	1,572	0.00
112	Fires starting on Network Rail infrastructure	3,634	110	3,744	0.01
150	Low adhesion inc. Autumn (Network Rail)	6,476	144	6,621	0.01
201	Overhead line/third rail faults	16,088	754	16,843	0.04
301A	Signal failures	10,760	706	11,466	0.03
301B	Track Circuit failures	39,853	1,711	41,564	0.09
301C	Axle counter failures	3,947	115	4,062	0.01
302A	Signalling System & Power Supply failures	24,846	1,261	26,106	0.06
302B	Other signal equipment failures	1,898	80	1,978	0.00
303	Telecoms failures	3,131	604	3,735	0.01
304	Cable faults (signalling & comms)	9,659	815	10,474	0.02
305	Track circuit failures – leaf-fall	3,324	40	3,364	0.01
401	Bridge strikes	12,667	482	13,149	0.03
402	External infrastructure damage – Vandalism/Theft	7,491	754	8,246	0.02
403	External level crossing/road incidents (not bridges)	5,915	244	6,158	0.01
501A	Network Rail Operations – signalling	16,396	1,244	17,640	0.04
501B	Network Rail Operations – control	2,590	884	3,474	0.01
501C	Network Rail Operations – railhead conditioning trains	3,699	71	3,770	0.01
501D	Network Rail Operations – other	1,555	192	1,747	0.00
502A	Timetable Planning	9,987	4,346	14,334	0.03
502C	Network Rail commercial takeback / other	22,599	2,528	25,127	0.06
503	External fatalities and trespass	47,892	1,367	49,259	0.11
504	External police on line/security alerts	4,570	26	4,596	0.01
505	External fires	5,652	118	5,770	0.01
506	External other	4,290	808	5,098	0.01
601	Unexplained	1,885	111	1,996	0.00
Total		**513,938**	**38,874**	**552,812**	**1.23**
Train Kilometres					**44,984,964**

Table 1.23: Sussex delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	24,428	449	24,877	0.08
102	Problems with trackside signs including TSR boards	1,430	0	1,430	0.00
103	Level crossing failures	4,475	14	4,489	0.01
104A	TSR's Due to Condition of Track	935	23	958	0.00
104B	Track faults (including broken rails)	23,956	389	24,345	0.08
104C	Rolling Contact Fatigue	33	0	33	0.00
104D	Reactionary delay to planned TSRs	708	0	708	0.00
105	Civil Engineering structures, earthworks & buildings	2,527	82	2,609	0.01
106	Other infrastructure	23,009	319	23,328	0.07
106A	Track Patrols & related possessions	4,703	115	4,818	0.02
107A	Possession over-run and related faults	5,212	241	5,453	0.02
107B	Other possession related delay	936	0	936	0.00
108	Mishap – infrastructure causes	11,649	76	11,725	0.04
109	Animals on line	2,415	27	2,442	0.01
110A	Severe weather (beyond design capability of infrastructure)	104,694	565	105,259	0.33
110B	Other weather (impact on infrastructure or network operation)	12,945	0	12,945	0.04
111A	Wheel slip due to leaf fall	1,542	3	1,546	0.00
111B	Vegetation Management failure	419	0	419	0.00
112	Fires starting on Network Rail infrastructure	6,845	37	6,882	0.02
150	Low adhesion inc. Autumn (Network Rail)	9,023	48	9,071	0.03
201	Overhead line/third rail faults	17,193	304	17,497	0.06
301A	Signal failures	7,132	51	7,183	0.02
301B	Track Circuit failures	35,373	503	35,876	0.11
301C	Axle counter failures	57	0	57	0.00
302A	Signalling System & Power Supply failures	29,432	209	29,641	0.09
302B	Other signal equipment failures	1,357	156	1,512	0.00
303	Telecoms failures	2,031	141	2,172	0.01
304	Cable faults (signalling & comms)	13,646	72	13,718	0.04
305	Track circuit failures – leaf-fall	498	0	498	0.00
401	Bridge strikes	9,525	191	9,716	0.03
402	External infrastructure damage – Vandalism/Theft	7,245	62	7,307	0.02
403	External level crossing/road incidents (not bridges)	3,327	31	3,359	0.01
501A	Network Rail Operations – signalling	49,231	946	50,177	0.16
501B	Network Rail Operations – control	4,337	349	4,686	0.01
501C	Network Rail Operations – railhead conditioning trains	4,632	71	4,703	0.01
501D	Network Rail Operations – other	6,306	57	6,362	0.02
502A	Timetable Planning	12,769	1,339	14,108	0.04
502C	Network Rail commercial takeback / other	24,162	264	24,426	0.08
503	External fatalities and trespass	52,756	334	53,089	0.17
504	External police on line/security alerts	1,019	30	1,049	0.00
505	External fires	1,951	16	1,967	0.01
506	External other	1,495	103	1,598	0.01
601	Unexplained	20,310	198	20,508	0.07
Total		**547,669**	**7,816**	**555,485**	**1.77**
Train Kilometres					**31,433,792**

Table 1.24: Anglia delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	53,654	20,734	74,388	0.16
102	Problems with trackside signs including TSR boards	1,537	124	1,661	0.00
103	Level crossing failures	18,562	2,427	20,989	0.05
104A	TSR's Due to Condition of Track	16,698	2,255	18,953	0.04
104B	Track faults (including broken rails)	58,245	22,200	80,445	0.18
104C	Rolling Contact Fatigue	0	0	0	–
104D	Reactionary delay to planned TSRs	6,374	2,043	8,417	0.02
105	Civil Engineering structures, earthworks & buildings	4,598	2,068	6,666	0.01
106	Other infrastructure	12,924	7,263	20,188	0.04
106A	Track Patrols & related possessions	3,649	1,562	5,211	0.01
107A	Possession over-run and related faults	14,781	5,978	20,759	0.05
107B	Other possession related delay	6,507	2,272	8,779	0.02
108	Mishap – infrastructure causes	15,803	8,074	23,877	0.05
109	Animals on line	9,800	1,709	11,509	0.03
110A	Severe weather (beyond design capability of infrastructure)	39,967	27,247	67,214	0.15
110B	Other weather (impact on infrastructure or network operation)	7,894	1,610	9,504	0.02
111A	Wheel slip due to leaf fall	3,419	220	3,640	0.01
111B	Vegetation Management failure	2,997	100	3,097	0.01
112	Fires starting on Network Rail infrastructure	4,070	225	4,295	0.01
150	Low adhesion inc. Autumn (Network Rail)	4,368	635	5,003	0.01
201	Overhead line/third rail faults	46,371	7,544	53,915	0.12
301A	Signal failures	24,729	5,283	30,012	0.07
301B	Track Circuit failures	36,269	12,490	48,759	0.11
301C	Axle counter failures	309	0	309	0.00
302A	Signalling System & Power Supply failures	35,312	7,998	43,310	0.10
302B	Other signal equipment failures	5,308	993	6,301	0.01
303	Telecoms failures	8,332	4,212	12,545	0.03
304	Cable faults (signalling & comms)	9,363	7,607	16,970	0.04
305	Track circuit failures – leaf-fall	4,302	932	5,234	0.01
401	Bridge strikes	10,407	2,516	12,923	0.03
402	External infrastructure damage – Vandalism/Theft	39,892	14,991	54,883	0.12
403	External level crossing/road incidents (not bridges)	13,272	4,215	17,486	0.04
501A	Network Rail Operations – signalling	23,872	11,311	35,183	0.08
501B	Network Rail Operations – control	9,404	8,056	17,460	0.04
501C	Network Rail Operations – railhead conditioning trains	1,362	321	1,683	0.00
501D	Network Rail Operations – other	18,163	4,463	22,626	0.05
502A	Timetable Planning	31,935	29,523	61,458	0.14
502C	Network Rail commercial takeback / other	13,542	13,648	27,190	0.06
503	External fatalities and trespass	60,283	17,166	77,449	0.17
504	External police on line/security alerts	1,865	775	2,640	0.01
505	External fires	3,830	799	4,629	0.01
506	External other	19,955	4,930	24,885	0.05
601	Unexplained	8,247	2,068	10,314	0.02
Total		**712,170**	**270,588**	**982,757**	**2.17**
Train Kilometres					**45,246,303**

Table 1.25: Midland and Continental delays to passenger and freight trains by detailed cause category 2009/10

No	*Category*	*Passenger minutes*	*Freight minutes*	*Combined minutes*	*Delay per 100 tr km*
101	Points failures	18,012	3,985	21,997	0.08
102	Problems with trackside signs including TSR boards	953	67	1,020	0.00
103	Level crossing failures	4,259	565	4,824	0.02
104A	TSR's Due to Condition of Track	6,330	6,445	12,775	0.05
104B	Track faults (including broken rails)	25,227	8,764	33,991	0.12
104C	Rolling Contact Fatigue	103	141	244	0.00
104D	Reactionary delay to planned TSRs	1,161	373	1,534	0.01
105	Civil Engineering structures, earthworks & buildings	588	104	692	0.00
106	Other infrastructure	7,950	1,103	9,053	0.03
106A	Track Patrols & related possessions	1,320	315	1,635	0.01
107A	Possession over-run and related faults	5,032	1,697	6,729	0.02
107B	Other possession related delay	296	45	341	0.00
108	Mishap – infrastructure causes	6,932	802	7,734	0.03
109	Animals on line	4,670	302	4,972	0.02
110A	Severe weather (beyond design capability of infrastructure)	9,223	1,816	11,039	0.04
110B	Other weather (impact on infrastructure or network operation)	1,632	139	1,771	0.01
111A	Wheel slip due to leaf fall	792	154	946	0.00
111B	Vegetation Management failure	2,250	182	2,432	0.01
112	Fires starting on Network Rail infrastructure	2,191	486	2,677	0.01
150	Low adhesion inc. Autumn (Network Rail)	3,366	147	3,513	0.01
201	Overhead line/third rail faults	9,319	518	9,837	0.04
301A	Signal failures	4,783	490	5,273	0.02
301B	Track Circuit failures	10,186	1,124	11,311	0.04
301C	Axle counter failures	6,478	1,867	8,345	0.03
302A	Signalling System & Power Supply failures	20,885	1,995	22,881	0.08
302B	Other signal equipment failures	2,293	1,172	3,465	0.01
303	Telecoms failures	1,034	259	1,293	0.00
304	Cable faults (signalling & comms)	4,029	1,248	5,277	0.02
305	Track circuit failures – leaf-fall	382	294	676	0.00
401	Bridge strikes	6,633	480	7,113	0.03
402	External infrastructure damage – Vandalism/Theft	10,727	2,543	13,270	0.05
403	External level crossing/road incidents (not bridges)	2,251	157	2,408	0.01
501A	Network Rail Operations – signalling	13,657	2,526	16,183	0.06
501B	Network Rail Operations – control	2,186	1,207	3,393	0.01
501C	Network Rail Operations – railhead conditioning trains	392	111	503	0.00
501D	Network Rail Operations – other	7,210	2,117	9,327	0.03
502A	Timetable Planning	11,883	9,243	21,126	0.08
502C	Network Rail commercial takeback / other	9,941	2,183	12,124	0.04
503	External fatalities and trespass	27,707	3,530	31,238	0.11
504	External police on line/security alerts	155	21	176	0.00
505	External fires	871	27	898	0.00
506	External other	15,531	2,911	18,442	0.07
601	Unexplained	11,884	2,190	14,074	0.05
Total		**282,708**	**65,846**	**348,555**	**1.26**
Train Kilometres					**27,624,709**

Asset failure

Infrastructure incidents recorded for attribution of delay

The number of performance incidents in asset related categories is shown in this section. These incidents are recorded for the purpose of identifying the cause and responsibility of delays and cancellations, whilst providing valuable management information on the causes of and trends in delays and hence an indication of where to maintain or renew the network assets. The records do not seek to represent a catalogue of every single physical component or system failure occurring on the network.

Bridge strikes represent externally caused incidents (road vehicles hitting bridges). However, Network Rail has some influence over prevention measures, and is able to mitigate the impact to either prevent or reduce the train delays arising.

In the tables below, prior year figures have been restated for two categories, due to the introduction of a new category, number 301C (Axle counter failures), and combining category number 304A (Change of aspects-no fault found) into 302B (Other signal equipment failures).

Network-wide totals

Incidents are recorded for the attribution of delays and cancellations. The following table (1.26) shows the number of infrastructure incidents (including category numbers) with delays attributed to them. In a small number of cases more than one incident will be attributed for the same physical incident, to reflect different phases of an incident or responsibilities for contractual delay attribution purposes.

Table 1.26: Network infrastructure incidents recorded for delay attribution (number)

No	*Category*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
101	Points failures	8,717	9,079	7,828	8,048	7,130
103	Level crossing failures	2,657	2,365	2,201	2,260	2,162
104A	TSR's due to condition of track	2,800	2,201	1,878	1,429	1,151
104B	Track faults (including broken rails)	6,293	7,681	6,721	6,149	5,392
104C	Rolling contact fatigue	71	91	74	170	127
105	Civil Engineering structures, earthworks & buildings	485	569	492	391	438
106	Other infrastructure	4,625	5,240	5,405	4,187	2,831
106A	Track patrols & related possessions	2,616	2,639	3,144	3,365	2,568
108	Mishap – infrastructure causes	1,075	1,416	1,634	1,849	1,453
112	Fires starting on Network Rail infrastructure	314	285	230	197	221
201	Overhead line/third rail faults	1,493	1,706	1,358	1,370	1,241
301A	Signal failures	8,141	7,369	6,566	6,560	5,999
301B	Track Circuit failures	8,019	7,522	5,985	5,375	5,150
301C	Axle counter failures	549	442	569	1,095	911
302A	Signalling system & power supply failures	3,272	3,998	3,943	3,750	4,018
302B	Other signal equipment failures	1,966	1,948	1,579	1,471	1,559
303	Telecoms failures	1,314	1,445	1,464	1,356	1,351
304	Cable faults (signalling & comms)	470	628	667	574	532
401	Bridge strikes	1,593	1,688	1,686	1,365	1,131
Total		**56,470**	**58,312**	**53,424**	**50,961**	**45,365**

Commentary

Total asset failure incidents fell by 11 per cent in 2009/10. This follows the improvement of five per cent seen the previous year.

The majority of individual categories saw improvements, with the remainder seeing generally modest increases in failures. The performance of the more significant individual categories and those with significant changes compared to the previous year are noted below.

Points failures (category 101) improved by 11 per cent after a three per cent increase in the previous year. Over the last five years, points failures have improved by 19 per cent. At the route level in 2009/10, incidents rose by 15 per cent on Midland & Continental and rose by six per cent on Anglia, partially reversing the improvement of the previous years in both cases. By contrast, points failures fell by 33 per cent for Sussex and 17 per cent for London North Western.

The number of track–related incidents (categories 104A–104C) fell by 14 per cent after an 11 per cent fall the previous year. Track incidents have fallen by 26 per cent over the last five years. 62 per cent of the improvement compared to 2009/10 was on the LNE Route where incidents fell by 26 per cent.

Train detection equipment failures improved by six per cent. This type of asset failure is this year split between two categories 301B (Track circuit failures) and 301C (Axle counter failures), but in previous Annual Returns was shown as a single category 301B. Of these, track circuit failures improved by four per cent, while the number of axle counter failures incidents decreased by 17 per cent compared to the previous year. Partly reflecting the increasing fitment of axle counters (in place of traditional track circuits) in recent years, the number of failures had doubled between 2005/06 and 2008/09.

Signal failures fell by nine per cent. This consolidates the significant improvements seen over the past five years.

The number of signalling system and power supply failures increased by seven per cent compared to the previous year. We are doing more work to fully understand the reasons for this but contributing factors could be the extreme winter weather and the autumn flooding.

The number of cable faults improved by seven per cent.

Traction power supply incidents (overhead line / third rail faults) improved by 9 per cent compared to 2008/2009 and were 18 per cent better than the average of the previous five years.

Other infrastructure (category 106) incidents improved by 32 per cent compared to 2008/2009. The number of incidents is 42 per cent less than over the past five years. London North Eastern, where incidents for other infrastructure incidents fell by 66 per cent, contributed to almost one half of the improvement compared to 2008/2009.

The number of the bridge strike incidents fell by a further 17 per cent in 2009/10, after an improvement of 19 per cent the previous year. This follows the significant programme of prevention and mitigation measures implemented in recent years.

Operating routes

The following tables (1.27 to 1.35) show the number of incidents recorded for delay attribution for each of the operating routes.

Table 1.27: Western infrastructure incidents recorded for delay attribution (number)						
No	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	1,316	1,219	1,224	1,316	1,232
103	Level crossing failures	411	307	349	406	358
104A	TSR's Due to Condition of Track	235	389	108	11	0
104B	Track faults (including broken rails)	828	1,101	709	524	504
104C	Rolling Contact Fatigue	6	11	6	0	5
105	Civil Engineering structures, earthworks & buildings	91	111	104	31	58
106	Other infrastructure	777	834	945	755	562
106A	Track Patrols & related possessions	84	96	102	242	281
108	Mishap – infrastructure causes	72	101	99	107	91
112	Fires starting on Network Rail infrastructure	8	7	6	2	3
201	Overhead line/third rail faults	11	16	15	7	6
301A	Signal failures	940	752	917	1,036	922
301B	Track Circuit failures	1,090	883	882	739	820
301C	Axle counter failures	0	69	47	110	78
302A	Signalling System & Power Supply failures	357	518	368	280	364
302B	Other signal equipment failures	321	426	280	274	286
303	Telecoms failures	277	341	347	248	298
304	Cable faults (signalling & comms)	56	79	75	25	37
401	Bridge strikes	282	290	239	195	167
Total above		**7,162**	**7,550**	**6,822**	**6,308**	**6,072**

Table 1.28: London North Eastern infrastructure incidents recorded for delay attribution (number)						
No	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	1,285	1,190	997	1,011	901
103	Level crossing failures	693	680	644	596	617
104A	TSR's Due to Condition of Track	802	743	727	708	325
104B	Track faults (including broken rails)	1,352	1,664	1,783	1,809	1,522
104C	Rolling Contact Fatigue	3	1	4	15	19
105	Civil Engineering structures, earthworks & buildings	161	162	173	170	94
106	Other infrastructure	958	600	808	908	306
106A	Track Patrols & related possessions	52	93	222	354	284
108	Mishap – infrastructure causes	334	584	601	528	380
112	Fires starting on Network Rail infrastructure	20	33	39	27	43
201	Overhead line/third rail faults	234	219	200	206	213
301A	Signal failures	1,282	1,020	944	955	929
301B	Track Circuit failures	887	661	508	506	624
301C	Axle counter failures	0	0	7	13	25
302A	Signalling System & Power Supply failures	620	908	815	920	849
302B	Other signal equipment failures	448	354	288	266	259
303	Telecoms failures	302	352	341	314	309
304	Cable faults (signalling & comms)	147	265	259	217	179
401	Bridge strikes	254	253	249	230	151
Total above		**9,834**	**9,782**	**9,609**	**9,753**	**8,029**

Table 1.29: London North Western infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	2,319	2,748	2,461	2,695	2,229
103	Level crossing failures	355	369	288	290	219
104A	TSR's Due to Condition of Track	839	526	458	348	374
104B	Track faults (including broken rails)	1,338	1,385	1,325	990	840
104C	Rolling Contact Fatigue	24	10	6	12	4
105	Civil Engineering structures, earthworks & buildings	80	75	70	40	29
106	Other infrastructure	877	953	897	653	270
106A	Track Patrols & related possessions	1,009	821	822	890	321
108	Mishap – infrastructure causes	308	246	295	318	258
112	Fires starting on Network Rail infrastructure	52	33	38	21	18
201	Overhead line/third rail faults	440	453	332	354	327
301A	Signal failures	2,199	2,103	1,982	1,989	1,690
301B	Track Circuit failures	2,123	2,424	2,068	1,781	1,421
301C	Axle counter failures	549	360	323	741	640
302A	Signalling System & Power Supply failures	763	856	815	795	845
302B	Other signal equipment failures	423	473	329	308	400
303	Telecoms failures	141	168	160	126	96
304	Cable faults (signalling & comms)	103	62	89	97	53
401	Bridge strikes	388	375	423	340	244
Total above		**14,330**	**14,440**	**13,181**	**12,788**	**10,278**

Table 1.30: Scotland infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	1,066	1,261	916	898	780
103	Level crossing failures	231	176	153	140	158
104A	TSR's Due to Condition of Track	148	63	80	21	8
104B	Track faults (including broken rails)	453	374	346	405	350
104C	Rolling Contact Fatigue	5	6	3	3	0
105	Civil Engineering structures, earthworks & buildings	87	22	33	25	67
106	Other infrastructure	216	169	294	319	245
106A	Track Patrols & related possessions	19	9	1	6	1
108	Mishap – infrastructure causes	73	129	181	192	131
112	Fires starting on Network Rail infrastructure	1	0	7	2	2
201	Overhead line/third rail faults	167	167	157	162	63
301A	Signal failures	1,334	1,263	971	909	853
301B	Track Circuit failures	991	939	690	630	575
301C	Axle counter failures	0	6	58	85	58
302A	Signalling System & Power Supply failures	336	364	386	429	398
302B	Other signal equipment failures	243	176	183	135	174
303	Telecoms failures	167	162	207	232	220
304	Cable faults (signalling & comms)	44	45	67	89	91
401	Bridge strikes	110	139	106	107	97
Total above		**5,691**	**5,470**	**4,839**	**4,789**	**4,271**

Table 1.31: Kent infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	527	498	365	474	473
103	Level crossing failures	121	89	78	100	96
104A	TSR's Due to Condition of Track	0	0	0	5	66
104B	Track faults (including broken rails)	445	525	392	443	423
104C	Rolling Contact Fatigue	7	9	2	0	2
105	Civil Engineering structures, earthworks & buildings	7	24	48	26	34
106	Other infrastructure	339	344	434	75	114
106A	Track Patrols & related possessions	160	205	284	392	361
108	Mishap – infrastructure causes	12	17	55	90	59
112	Fires starting on Network Rail infrastructure	59	48	27	38	40
201	Overhead line/third rail faults	57	92	83	94	65
301A	Signal failures	574	447	249	320	370
301B	Track Circuit failures	590	595	395	430	484
301C	Axle counter failures	0	0	0	1	1
302A	Signalling System & Power Supply failures	286	266	321	312	265
302B	Other signal equipment failures	111	105	84	100	71
303	Telecoms failures	60	83	66	64	61
304	Cable faults (signalling & comms)	18	34	27	30	22
401	Bridge strikes	116	137	140	127	119
Total above		**3,489**	**3,518**	**3,050**	**3,121**	**3,126**

Table 1.32: Wessex infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	827	796	634	497	454
103	Level crossing failures	242	203	216	225	182
104A	TSR's Due to Condition of Track	0	0	0	0	0
104B	Track faults (including broken rails)	574	1,152	708	560	507
104C	Rolling Contact Fatigue	9	50	46	135	91
105	Civil Engineering structures, earthworks & buildings	5	39	18	22	68
106	Other infrastructure	200	369	434	286	337
106A	Track Patrols & related possessions	601	777	703	580	499
108	Mishap – infrastructure causes	37	65	80	105	90
112	Fires starting on Network Rail infrastructure	68	71	42	34	41
201	Overhead line/third rail faults	93	104	72	72	81
301A	Signal failures	539	632	488	282	289
301B	Track Circuit failures	928	881	578	510	425
301C	Axle counter failures	0	7	118	91	62
302A	Signalling System & Power Supply failures	222	192	242	257	299
302B	Other signal equipment failures	111	89	118	111	78
303	Telecoms failures	84	86	77	71	85
304	Cable faults (signalling & comms)	22	32	53	45	31
401	Bridge strikes	140	161	193	117	137
Total above		**4,702**	**5,706**	**4,820**	**4,000**	**3,756**

Table 1.33: Sussex infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	299	342	420	474	317
103	Level crossing failures	111	112	90	118	80
104A	TSR's Due to Condition of Track	2	0	0	0	18
104B	Track faults (including broken rails)	193	251	322	295	234
104C	Rolling Contact Fatigue	10	4	5	0	1
105	Civil Engineering structures, earthworks & buildings	1	88	12	20	26
106	Other infrastructure	241	406	385	355	192
106A	Track Patrols & related possessions	17	79	153	195	323
108	Mishap – infrastructure causes	89	77	87	78	47
112	Fires starting on Network Rail infrastructure	67	52	24	33	30
201	Overhead line/third rail faults	113	128	66	43	80
301A	Signal failures	324	295	312	454	258
301B	Track Circuit failures	394	325	293	318	315
301C	Axle counter failures	0	0	0	21	3
302A	Signalling System & Power Supply failures	204	233	243	122	297
302B	Other signal equipment failures	81	90	83	56	49
303	Telecoms failures	90	53	60	76	67
304	Cable faults (signalling & comms)	40	39	32	16	62
401	Bridge strikes	74	73	70	48	51
Total above		**2,350**	**2,647**	**2,657**	**2,722**	**2,450**

Table 1.34: Anglia infrastructure incidents recorded for delay attribution (number)						
No	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	622	636	521	469	498
103	Level crossing failures	347	302	271	308	349
104A	TSR's Due to Condition of Track	222	85	197	158	118
104B	Track faults (including broken rails)	630	663	573	635	576
104C	Rolling Contact Fatigue	3	0	2	0	0
105	Civil Engineering structures, earthworks & buildings	30	38	31	48	57
106	Other infrastructure	542	674	665	504	504
106A	Track Patrols & related possessions	245	258	330	405	344
108	Mishap – infrastructure causes	109	113	146	296	266
112	Fires starting on Network Rail infrastructure	35	37	41	34	40
201	Overhead line/third rail faults	288	414	365	360	330
301A	Signal failures	589	504	448	418	514
301B	Track Circuit failures	664	570	384	323	367
301C	Axle counter failures	0	0	12	6	7
302A	Signalling System & Power Supply failures	265	342	386	384	442
302B	Other signal equipment failures	134	137	120	109	130
303	Telecoms failures	151	155	135	163	154
304	Cable faults (signalling & comms)	16	15	27	24	24
401	Bridge strikes	140	147	150	95	97
Total above		**5,032**	**5,090**	**4,804**	**4,739**	**4,817**

Table 1.35: Midland & Continental infrastructure incidents recorded for delay attribution (number)						
No.	***Category***	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
101	Points failures	456	389	290	214	246
103	Level crossing failures	146	127	112	77	103
104A	TSR's Due to Condition of Track	552	395	308	178	242
104B	Track faults (including broken rails)	480	566	563	488	436
104C	Rolling Contact Fatigue	4	0	0	5	5
105	Civil Engineering structures, earthworks & buildings	23	10	3	9	5
106	Other infrastructure	475	891	543	332	301
106A	Track Patrols & related possessions	429	301	527	301	154
108	Mishap – infrastructure causes	41	84	90	135	131
112	Fires starting on Network Rail infrastructure	4	4	6	6	4
201	Overhead line/third rail faults	90	113	68	72	76
301A	Signal failures	360	353	255	197	174
301B	Track Circuit failures	352	244	187	138	119
301C	Axle counter failures	0	0	4	27	37
302A	Signalling System & Power Supply failures	219	319	367	251	259
302B	other signal equipment failures	94	98	94	112	112
303	Telecoms failures	42	45	71	62	61
304	Cable faults (signalling & comms)	24	57	38	31	33
401	Bridge strikes	89	113	116	106	68
Total above		**3,880**	**4,109**	**3,642**	**2,741**	**2,566**

Cancellations & Significant Lateness (CaSL)

CaSL is a new regulatory output measure for England & Wales in CP4.

Definition

CaSL is defined as the number and percentage of passenger trains (franchised and open access operators) which are cancelled in part or full, or which arrive at their final destination 30 or more minutes later than the time shown in the public timetable.

Commentary

In 2009/10, the percentage of trains which were cancelled or significantly late was 2.6 per cent for England & Wales. This was ahead of the regulatory target of 2.8 per cent and better than that achieved in 2008/09 (2.8 per cent). CaSL results were also better than target for the Long Distance and Regional sectors, but slightly worse for the London & South East sector as a result of the impact of the severe winter:

- London & South East: 2.5 per cent was achieved, compared to a regulatory target of 2.3 per cent and 2.5 per cent in 2008/09;
- Long Distance: 4.6 per cent achieved, compared to a regulatory target of 4.9 per cent and 5.2 per cent achieved in 2008/09; and
- Regional: 2.1 per cent achieved, compared to a regulatory target of 2.6 per cent and 2.6 per cent achieved in 2008/09.

As CaSL is strongly linked to PPM and delay, the approach to improvement in CaSL was as part of an overall integrated performance improvement plan. Delivery of improvements in CaSL during the early part of 2009/10 reinforced this connection, but there is an additional focus on broadening the understanding of CaSL across the performance community and initiating CaSL specific plans, such as more proactive management of significantly late and cancelled trains.

CaSL delivery was significantly ahead of plan in all areas at the end of the autumn period. The winter period caused a major reversal of delivery of CaSL, particularly in the London & South East area, and to a lesser extent on Long Distance services. The initial improvement against the target before the winter period was lost within a few days, and the ability to recover in last three periods of the year became an impossibility soon after. In the severe winter weather conditions the requirements to run as full a service as possible became the priority with the practical requirements for punctuality and delivery of performance targets being a less significant requirement. The shortfall against the London & South East target was entirely due to the impact of the severe winter weather.

Table 1.36: Cancellations and significant lateness (CaSL)

Industry Sector	*P1 8/10*	*P2 8/10*	*P3 8/10*	*P4 8/10*	*P5 8/10*	*P6 8/10*	*P7 8/10*	*P8 8/10*	*P9 8/10*	*P10 8/10*	*P11 810*	*P12 8/10*	*P13 8/10*	*Annual Total*
CaSL-Count of Instances														
London & South East	5,358	4,833	4,660	6,280	4,158	4,882	5,076	5,837	7,602	21,072	10,489	7,444	4,223	91,914
Long Distance	2,026	1,224	1,963	1,652	1,488	1,525	1,053	1,717	2,371	4,816	1,888	1,809	1,442	24,974
Regional	2,676	2,374	3,408	2,874	2,730	3,007	2,651	3,383	3,400	6,520	2,855	2,551	2,343	40,772
England & Wales	**10,060**	**8,431**	**10,031**	**10,806**	**8,376**	**9,414**	**8,780**	**10,937**	**13,373**	**32,408**	**15,232**	**11,804**	**8,008**	**157,660**
CaSL-Period Result*														
London & South East	1.70%	1.80%	1.70%	2.20%	1.50%	1.70%	1.80%	2.10%	2.70%	8.60%	3.70%	2.60%	1.60%	2.50%
Long Distance	4.30%	3.00%	4.70%	3.90%	3.60%	3.70%	2.50%	4.10%	5.70%	13.00%	4.50%	4.30%	3.80%	4.60%
Regional	1.50%	1.60%	2.20%	1.90%	1.80%	2.00%	1.80%	2.30%	2.30%	4.90%	1.90%	1.70%	1.80%	2.10%
England & Wales	**1.90%**	**1.80%**	**2.10%**	**2.30%**	**1.80%**	**2.00%**	**1.90%**	**2.30%**	**2.90%**	**7.80%**	**3.20%**	**2.50%**	**1.90%**	**2.60%**
CaSL-MAA Result*														
London & South East	2.50%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.80%	2.90%	2.50%	2.50%	2.50%
Long Distance	5.20%	5.00%	5.00%	4.80%	4.60%	4.60%	4.50%	4.40%	4.40%	4.80%	4.80%	4.60%	4.60%	4.60%
Regional	2.50%	2.50%	2.50%	2.50%	2.40%	2.30%	2.30%	2.20%	2.10%	2.20%	2.20%	2.10%	2.10%	2.10%
England & Wales	**2.70%**	**2.70%**	**2.60%**	**2.60%**	**2.60%**	**2.60%**	**2.50%**	**2.50%**	**2.50%**	**2.80%**	**2.80%**	**2.60%**	**2.60%**	**2.60%**

Note: *Expressed as percentage of trains planned

Joint Performance Process

Introduction

The objective of the Joint Performance Process (JPP) is to bring together, through collaborative working, performance improvement across the industry and align all actions to the provision of punctual train services for passengers. The prime target is to improve PPM with sub-targets based on delay minutes split by company cause and other key inputs to PPM. The key output is the production of an annual Joint Performance Improvement Plan (JPIP) against which monitoring and review takes place through the year – a plan, do, review cycle.

This is the fifth year for completing JPIPs. The first JPIPs for the year 2005/06 simply combined individual plans from Network Rail and operators with a broad statement of intent to develop more collaborative working. JPIPs compiled for franchised operators since that time have developed this more collaborative theme with focus changing over years reflecting changing ambitions for the industry.

Specifically for the 2010/11 JPIP, the development process has taken place after a year when actual performance was initially substantially better than target, then moving to being worse in some areas as a result of poor performance during the winter period resulting in relative uncertainty in planning for the new JPIPs.

Contractual status

As Condition LA of the Network Code, the contractual precedent for JPIPs was brought into use on 27 March 2006, with franchised operators switching from a Local Output Commitment (LOC) approach to a JPP approach effective from 1 April 2006. No other operators have formally switched to a JPIP approach although there are increasing levels of joint working with freight and open access operators.

Process development

The Annual Return 2009 highlighted that the JPIP had simply evolved in 2008/09 as a bespoke process, against a backdrop of significant development work for CP4. Work during 2009/10 to develop the 2010/11 JPIPs has followed this trend with the process being broadly smoother than previous years, despite the volatility in delivery during the planning period, with fewer significant disputes and more efficient creation of targets and documents. The network level output shows a targeted improvement or around the same level as that planned in the last two years showing consistency of ambition and interest.

Beyond this, the JPP has been used as a guide for other joint work, most obviously focusing on network availability (coined joint network availability plans – “JNAPs”) and passenger information during disruption.

Outputs

The overall product of JPP development in 2009/10 is:

- delivery of the 2009/10 target for PPM for the network;
- JPIPs for 2010/11 towards a network target of 92.3 per cent (0.8 per cent higher than the required CP4 output);
- maintained ambitions for strong, measured improvement in performance;
- continued expansion of the practical focus on train performance planning across Network Rail functions; and
- further consolidation of cross industry focus.

In summary, the objective identified in the 2008/09 Annual Return document has been delivered in the 2010/11 JPIP planning round. Following the lessons learned workstream after the completion of the planning work for 2010/11, we are focusing on delivering the practical improvements from that which will help provide more certainty earlier in the planning process.

In further practical terms, however, there remains scope to improve the inter-linking between longer term and shorter term performance planning. This is continuous improvement activity, drawing together increased focus across Network Rail’s functions and in operators, using refreshed processes and systems where they are developed (e.g. in Network Rail’s performance improvement process, and planned implementation of Network Rail’s action planning system (iPAT)) to deliver enhanced efficiency and effectiveness in these links. In turn this will link with work developing proposals for CP5 and beyond.

Beyond this, 2009/10 has seen a gradual extension of operations by franchised train operators onto networks over which Network Rail has different objectives and levels of control compared to the main network – e.g. the East London Line and High Speed 1 networks. A key action for 2010/11 will be to focus on the management and reporting of performance on

these networks, and their links with the rest of the network.

Other operators

All substantive operators have the option to move to a JPIP approach under Condition LA. Overall, there has been an increased evolution towards a JPIP style approach compared to previous years.

Table 1.37 below lists train operators with JPIPs, and commentary on the practical position of joint planning with other operators.

Table 1.37: List of operators with JPIPs and position of other operators

Operator	*Type of Operator*	*Route*	*Notes*
With JPIPs			
Arriva Trains Wales	Franchised	Western	
CrossCountry	Franchised	LNW	
c2c Rail	Franchised	Anglia	
East Midlands Trains	Franchised	LNE	
First Capital Connect	Franchised	LNE	
First Great Western	Franchised	Western	
First ScotRail	Franchised	Scotland	
London Midland	Franchised	LNW	
LOROL	Franchised	Anglia	Includes new operations on the East London Line
Merseyrail Electrics	Franchised	LNW	
Northern	Franchised	LNE	
NXEA	Franchised	Anglia	
NXEC	Franchised	LNE	
South Eastern	Franchised	Kent	Includes new operations on the High Speed 1 line
Southern	Franchised	Sussex	
Stagecoach South West Trains	Franchised	Wessex	
Chiltern Railway	Franchised	LNW	
First Transpennine	Franchised	LNE	
Virgin West Coast Trains	Franchised	LNW	
Other Operators			
Eurostar (UK)	Open	Kent	Effective informal joint plan planned to cover operation on both the main network and new lines managed by Network Rail
Heathrow Express	Open	Western	Effective joint planning; delay, PPM and CaSL trajectories included in CP4 trajectories
Hull Trains	Open	LNE	LOC provided. Effective informal joint plan developed; delay, PPM and CaSL trajectories included in CP4 trajectories
Nexus	Open	LNE	
Grand Central	Open	LNE	LOC provided. Effective informal joint plan developed; delay, PPM and CaSL trajectories included in CP4 trajectories
Wrexham, Shropshire and Marylebone	Open	LNW	Declined to take a LOC; Effective informal joint plan being developed; delay, PPM and CaSL trajectories created for CP4 outputs; practical operation being managed through Chiltern railways bringing practical application of JPP type activity
Freight operators	Freight	HQ	Increasing ambition for further improvement creating further development of joint planning, in part encouraged by better and more thorough inclusion within overall industry reporting.

Customer satisfaction – passenger and freight operators

Definition and reporting method

We have a measure for customer satisfaction, both for passenger and freight operators, which is based on a questionnaire independently administered by MORI. There are two significant questions on the questionnaire for the customer satisfaction measure. The first is an overall satisfaction level and asks:

"Taking into account all of your experiences with Network Rail over the past 12 months as a whole, how satisfied or dissatisfied are you with Network Rail?"

The respondent chooses an answer from the following list, with a numerical value assigned to the response (as shown in square brackets), but which is not visible to the respondent:

- very dissatisfied [–2];
- fairly dissatisfied [–1];
- neither/not dissatisfied or satisfied [0];
- fairly satisfied [1]; and
- very satisfied [2].

The sum total of the scores are divided by the number of respondents and weighted in proportion to passenger or freight traffic.

As described below, the survey is wider than the above question and has various questions and components to it so that we can better determine our customers' views. This also helps us to focus our work on areas of priority for our customers.

The overall satisfaction question is new this year and was agreed with ORR as being a meaningful indicator for annual changes in customer satisfaction. It provides additional insight to the previously used single measure of advocacy which asked:

"Which of the following best describes how you feel about Network Rail" and respondents were asked to indicate from one of the following five responses:

- I would be critical without being asked;
- I would be critical if someone asked my opinion;
- I would be neutral if someone asked my opinion;
- I would speak highly if someone asked my opinion; and
- I think so much that I would speak highly of them without being asked.

Results

The following tables (1.38 to 1.40) show the results of the customer satisfaction surveys, with respondents separated into passenger operators (Table 1.38), freight operators (Table 1.39), and overall average satisfaction score for passenger and freight operators (Table1.40).

Table 1.38: Customer satisfaction – passenger operators

Unit of Measure		*Autumn 2006*	*Autumn 2007*	*Autumn 2008*	*Autumn 2009*	*Variance 2008/ 09*
Customer satisfaction	Index –2 to 2	(0.14)	(0.21)	(0.25)	(0.11)	+0.14

Table 1.39: Customer satisfaction – freight operators

Unit of Measure		*Autumn 2006*	*Autumn 2007*	*Autumn 2008*	*Autumn 2009*	*Variance 2008/ 09*
Customer satisfaction	Index –2 to 2	0.00	(0.85)	(0.57)	(0.44)	+0.13

Table 1.40: Mean satisfaction – Overall level for TOC/FOC

Year	*Overall*	*TOC*	*FOC*
2009	3.33	3.35	2.95
2008	3.08	3.09	2.93

Commentary

The survey was carried out between the middle of October and late November 2009 and represents changes in customers' perceptions (based on interviews with 256 senior managers) in the twelve months since the last survey. Perceptions of customers' relationship with Network Rail are measured using a five point advocacy scale (+2 to –2 as above), where zero indicates a neutral view of performance.

Since Autumn 2006, the survey sampled the opinions of a wider cross-section of managers than previously, concentrating the effort here rather than on the driver community. This approach has yielded substantially more detailed material than before, permitting a more specific response for Network Rail teams. In particular the availability of some 3,500 verbatim comments has prompted detailed action plans to address the issues raised. Further, results have been analysed by customer, by Network Rail route and by function, to enable a more widespread understanding than previously.

Analysis of the results indicates that the perceptions of advocacy by TOCs and FOCs have improved since the previous survey was completed. Overall perceptions for the TOC community improved from –0.25 to –0.11. Freight customer perceptions saw an increase, from a score of –0.57 in Autumn 2008 to –0.44 in Autumn 2009.

The overall mean satisfaction improved from 3.08 in 2008 to 3.33 in 2009. The survey showed 50 per cent of the 256 senior managers questioned were very/fairly satisfied with Network Rail over the past 12 months as a whole.

The improvement is due to Network Rail being seen as valuing the relationship with customers, understanding their needs and delivering on its promises.

Network Rail continues to engage at a local level with customers to respond to their own specific requirements and needs. Whilst some train operators like a formal structure of a 'customer satisfaction improvement plan' others prefer a more action-specific and initiative-led approach. Network Rail's Customer Relationship Executive teams are responsible for understanding customer requirements and tracking progress and satisfaction through the year.

Changes that are considered to have helped satisfaction include a number of changes relating to working with our customers at stations, including the continuation of Integrated Station Planning and Local Delivery Groups to help involve customers in the decisions made over investment at stations.

Passenger satisfaction

Passenger Focus (PF) is an independent consumer watchdog for Britain's rail passengers. PF carries out two passenger satisfaction surveys every year, one each in autumn and spring. The National Passenger Survey (NPS) provides a network wide picture of customer satisfaction with rail travel from a representative sample of passenger journeys which includes overall satisfaction, as shown in the table (1.41) below.

The NPS is conducted across the entire franchised railway and also two non-franchised TOCs. Self-completion questionnaires are distributed at approximately 700 stations across Great Britain, selected to be representative of the entire network. The questionnaires are distributed at different times of the day on all days of the week. The data is weighted to help ensure the sample accurately represents passengers using each operator's services in proportion to commuting, business and leisure journeys.

Overall, at least 26,000 correctly completed questionnaires are returned each survey. For the majority of TOCs the results are based on responses from at least 1,000 passengers for each survey. Smaller operators' results are based on the views of at least 500 passengers whilst 2,750 passengers are surveyed for the largest operator.

Results

The results for overall passenger satisfaction show the average score over the past nine surveys has remained above 80 per cent. The autumn 2009 survey score was at 83 per cent which is one of the two highest scores, the other survey to achieve this score was in autumn 2008.

Passengers have expressed their wish to be kept informed about services when there is disruption to the network. This particularly affects when there are disruptions to the service due to bad weather. This is an area that both Network Rail and TOCs continue to work on improving.

Table 1.41: Overall passenger satisfaction

Autumn 2009	83%
Spring 2009	81%
Autumn 2008	83%
Spring 2008	80%
Autumn 2007	81%
Spring 2007	79%
Autumn 2006	81%
Spring 2006	80%
Autumn 2005	80%

Supplier satisfaction

The supplier satisfaction survey is also carried out by Ipsos MORI on behalf of Network Rail and is based on the same methodology as that for the passenger and freight surveys. Suppliers are asked 'Which of these best describes how you feel about Network Rail?'

The respondent chooses an answer from the following list, with a numerical value assigned to the response (as shown in brackets), but which is not visible to the respondent:

- I would be critical of Network Rail without being asked [–2];
- I would be critical of Network Rail if someone asked my opinion [–1];
- I would be neutral about Network Rail if someone asked my opinion [0];
- I would speak highly of Network Rail if someone asked my opinion [1]; and
- I think so much of Network Rail I would speak highly of them without being asked [2].

By summing the scores and dividing by the number of respondents a weighted index score is derived.

The following table (1.42) shows the scores returned to the supplier satisfaction survey.

Commentary

This year's survey shows a slight increase in satisfaction levels amongst the company's key suppliers despite current economic conditions. However, Network Rail recognises that the size of the increase is lower than hoped for. The key themes in suppliers' responses remain better levels of collaboration, improved long-term planning, improved attitude towards innovation and behaving as a more integrated and consistent organisation, both across business units and from top to bottom.

Working with our key suppliers, the Railway Industry Association (RIA) and Civil Engineering Contractors Association (CECA), we have built a Supply Chain Management Maturity Model that defines how Network Rail must transform in order to be seen as a client of choice, i.e. suppliers would speak highly of Network Rail if asked, in terms of five key dimensions:

- planning;
- design, development and innovation;
- project management;
- procurement; and
- values and behaviours.

The Efficient Infrastructure Delivery (EID) workstream of Network Rail's Transformation Programme, as well as various other initiatives across the company, is looking to drive the company up the Maturity Model. The key initiatives that have been completed in the past year, some that are currently in progress, and those that are under development for launch in the next twelve months are summarised below.

Planning

Workbank planning is a major pillar of the EID program; its key objective is to deliver a long term workbank which does not change, communicated with transparency to the supply chain, contracted significantly in advance of the works to enable the most efficient delivery.

In Civils, the future workbank has been defined and locked down for the next four years out, allowing integrated packaging, improved development and significantly reduced change. The 2010/11 workbank was contracted six to nine months earlier than previous years, with a greater proportion of the work (40 per cent vs. 25 per cent) being competitively tendered. We are on target to contract 2011/12 workbank by the end of June; 2012/13 by March 2011 with rolling three year tender event schedule visible from then on.

Table 1.42: Supplier satisfaction

Unit of Measure	*2007/08*	*2008/09*	*2009/10*	*Variance 2009 to 10*
Supplier satisfaction Index –2 to 2	0.58	0.23	0.31	0.08

In Signalling and Telecoms, the focus to date has been on scope and schedule stability; schedule adherence has already improved by around 35 per cent to around 65 per cent. New frameworks are planned to take effect from June 2011. A supplier forum is being scheduled for early July 2010 with key contractors to establish the best method of supply chain engagement.

In Electrification, we are currently reviewing the strategy. This is due for completion in the summer and we expect to finalise and issue the business plan for the remainder of CP4 in January 2011.

The program has also reduced access planning timescales from two/three years to T-38 weeks.

Design, development and innovation

The EID program is also working to improve Network Rail's approach to design management. Key initiatives include:

- tier 1 dedicated design resource strategy;
- make vs. buy review of asset design activities;
- standardisation of designs on internet based platform;
- improved visibility of construction budgets to design engineers;
- clearer remits through remit templates and GRIP 3 peer reviews; and
- streamlining of design approval process.

We are currently implementing a new process for the management of innovation, focussed initially on the development and introduction of new and improved products. The process is currently being piloted, with a view to full deployment later this year. Benefits include:

- better prioritisation of research and development work;
- a clearer approach to engagement of the supply base;
- greater visibility of products in the process;
- faster approval of new products; and
- improved assurance of in-service performance.

Project management

The EID programme is working to make Network Rail's approach to project management more efficient and effective through increased accountability and quicker decision making. Key initiatives include:

- schedule-based payments leading to minimal information requirement with applications for payment;
- fewer changes required during project lifecycle due to scope lock-down;
- clearer change control process, including new templates;
- empowerment of project teams to settle claims;
- reduced reporting requirements on exception basis;
- faster payments through reverse factoring; and
- targeted training through discipline management.

Procurement

The EID program is addressing the quality of estimating through improved cost modelling and building feedback loops between project outturn costs and estimates.

Outside of the transformation programme, the commercial teams have continued to drive improvements across the assets and programmes. Key initiatives include:

- a review of the Supplier Account Management (SAM) programme, validating that account managers have full accountability, authority and necessary information to represent Network Rail as a single point of contact for all key suppliers;
- 360 degree performance feedback (Prism) is now in place across investment projects, allowing Network Rail and its suppliers to understand areas of strong and poor performance and informing improvement plans within both organisations;
- application and certification process improvement. Performance tracking measures timing performance against a series of targets all designed to ensure that we pay our suppliers on time. Currently, 95 per cent of certificates and invoices are paid to terms;

- enhancing the new tender evaluation model following its deployment last year, providing a consistent and objective approach for the adjudication of tenders and associated information required from suppliers;
- a tendering feedback process on quality of documentation and processes. Suppliers are able to submit their comments in a structured and anonymous way on what is good and what could be improved, relative to other clients; and
- a comprehensive learning and development programme aimed at significant improvements in the calibre of all commercial staff.

Values and behaviour

The supply chain charter is well recognised across the commercial teams in Network Rail and the supply chain itself. Under the 'Service Culture' workstream of the Transformation Programme, non-commercial supplier-facing staff in Network Rail will be briefed on the charter and look at ways to demonstrate the values and behaviours it embodies, supported by a company wide network of charter champions.

As well as looking at cultural change, the EID programme is looking at removing key barriers to service excellence:

- more empowerment and accountability of staff through risk-based investment and commercial approval processes;
- KPI's tracking performance and compliance;
- clearer and visible processes; and
- removal of unnecessary bureaucracy.

Route Utilisation Strategies (RUSs)

Network Rail continues to develop RUSs in accordance with its obligations under Licence Condition 1, the regulatory guidelines and the recommendations of the Rail Industry Planning Group.

Objectives

RUSs seek to achieve the 'route utilisation objective' as defined in section 1.24 of Licence Condition 1, that is, 'the effective and efficient use and development of the capacity available on the network, consistent with the funding that is, or is likely to become, available during the period of the route utilisation strategy and with the licence holder's performance of the duty' [to operate, maintain, renew and develop the network].

Process

The process being used to develop RUSs in accordance with the ORR RUS Guidelines, which is published in the RUS Manual. This consists of a Consultation Guide and a Technical Guide, both of which are available on the Network Rail website.

A programme showing target establishment dates for each RUS, in accordance with section 1.16 of Licence Condition 1, was drafted, discussed and reviewed during 2005/06 with input from industry parties, governments and ORR, and was subsequently formally submitted. The programme was approved by ORR on 23 June 2006. This programme is reviewed biannually and any revisions are endorsed by the Rail Industry Planning Group.

The original programme of RUSs is scheduled to be completed by 2011. Network Rail is obliged under its Network Licence to maintain established RUSs to ensure that the recommended strategy remains valid and fit for purpose. A number of factors can affect RUS recommendations over time, including changed Government policy, economic circumstance and franchise change and remapping. The existing RUS programme commenced in December 2004 and in July 2007 the publication of the Government White Paper "Delivering a Sustainable Railway" required Network Rail to consider the 30 year planning horizon in its development of Route Utilisation Strategies. A number of the earlier RUS recommendations therefore need to be reappraised to consider this longer-term planning framework. The publication of the High Level Output Specification (HLOS) in 2007 and Network Rail's Delivery Plan in 2008/9 has also changed the way in which a number of recommendations will be delivered.

Network Rail therefore proposes to address these changes through a second generation of RUSs. These strategies will adopt a wider viewpoint than undertaken in the established RUSs and, through analysis of the changes that have occurred, identify the strategic gaps that require further appraisal.

The strategies will not seek to confine themselves to a particular geographic area and will also not reappraise the recommendations made in established RUSs where these remain valid.

This second generation of RUSs has identified three workstreams that will consider strategic gaps in London & South East, the North of England and Scotland.

Table 1.43: Position at the end of 2009/10	
Cross London RUS	Established
East Coast Main Line RUS	Established
East Midlands RUS	Published, awaiting establishment *
Freight RUS	Established
Great Western RUS	Published, awaiting establishment *
Greater Anglia RUS	Established
Kent RUS	Established
Lancashire and Cumbria RUS	Established
Merseyside RUS	Established
North West RUS	Established
Scotland RUS	Established
South London RUS	Established
South West Main Line RUS	Established
Sussex RUS	Established
Wales RUS	Established
West Coast Main Line RUS	In process
West Midlands and Chilterns RUS	In process
Yorkshire and Humber RUS	Established
Network RUS: Electrification	Established
Network RUS: Rolling Stock and Depots	In Process
Network RUS: Scenarios and Long Distance Forecasts	Established
Network RUS: Stations	In Process
Generation 2: London and South East RUS	In process
Generation 2: Northern RUS	In process
Generation 2: Scotland RUS	In process

Note: *Subsequently established

Programme and Progress

Table 1.43 shows the status of the Route Utilisation Strategies at the end of March 2010.

Inclusion

Network Rail leads and is responsible for the development of RUSs, but the process adopted continues to emphasise the widest possible inclusion of industry and wider stakeholder groups.

Each RUS is overseen by an industry Stakeholder Management Group (SMG) comprising train operating companies, freight operating companies, ATOC, government(s), Passenger Focus and other parties where relevant. Transport for London and Passenger Transport Executives are members of appropriate SMGs.

The practice of organising wider stakeholder group (WSG) meetings at intervals throughout the development of each RUS has continued, as well as briefings with individual stakeholders.

We have also continued the local and regional government conferences, held six-monthly in Birmingham.

Network Rail complaints management

Definition and reporting method

A new Lineside Visual Environment measure took effect from period 1 of 2009/10 and it measures our responsiveness in resolving public enquiries relating to the lineside visual environment. It forms part of one of 15 KPIs, which are used as a rolling measurement for the effectiveness of the company at achieving its internal and external annual targets.

The measure focuses on service requests (SRs) from the following categories:

- fly posting, fly tipping, graffiti and litter;
- vegetation (includes general vegetation, trees, vegetation clearance, giant hogweed, Japanese knotweed, ragwort);
- site clearance;
- fencing and boundary walls; and
- bridge appearance.

A SR is, in effect, an actionable enquiry for the company to undertake in order to resolve an issue reported to us – usually through our National Helpline. These categories were chosen as they best represent the 'lineside visual environment'.

The result shows the percentage of compliant closures, out of the total number of service requests that have been or should have been closed within the period.

A complaint closure is one that takes place within 20 calendar days from the date the SR is first logged (usually at the point of a telephone call or a letter being received by our National Helpline). A closure is the provision of either a resolution or a satisfactory response to a public enquiry. A satisfactory response may not be the answer the member of public wants to hear – however, it can still be a complaint closure provided sufficient information to support the answer is provided.

The headline figure acts as the national percentage across all the categories listed above. This can be supported by a breakdown for each category type split by route.

Because this measure is looking at a range of category types it will reflect the performance of several different functions. Approximately 90 per cent of these service requests are passed to Maintenance for resolution, but other functions will also be involved.

Our internal target was to achieve 90 per cent of compliant closures by the end of the 2009/10 financial year.

Results

The target was set incrementally in order to provide a challenging level of improvement which took in to account the practical level of change needed to achieve consistent progress. Table 1.44 shows the national target percentile and the national result to demonstrate our journey so far.

Table 1.44: Responsiveness: actual versus target

Period	*Internal target (%)*	*Actual result (%)*
1	50	40.2
2	50	36.4
3	50	43.3
4	55	53.1
5	60	46.5
6	65	57.6
7	70	72.5
8	75	76.4
9	80	85.1
10	80	78.9
11	85	95.7
12	90	98.3
13	90	97.6

Commentary

This is the first year that this measure has been used to report on the performance of the company for visual lineside environment issues. As this is the only data that we have related to these issues, we have provided the data for each period.

As we can see, real sustainable progress was made from period 7 onwards, during which over 70 per cent of cases were closed within 20 days. This has been sustained throughout the last half of the year with the only failure to achieve the target occurring in period 10.

Improved working practices and constant communication between the community relations and Maintenance teams have seen a steady reduction in the amount of time taken to get lineside issues resolved. This has also resulted in our lineside customers being kept aware of developments more frequently and quickly than in the past as there is more up to date information about ongoing cases than before.

Key regulatory issues arising in 2009/10

No breaches of our network licence were declared during 2009/10. However, during the course of the year a number of issues attracted regulatory attention. A summary of some of the key issues is provided below:

West Coast Main Line

During the course of 2009/10 the West Coast Main Line suffered from some volatility in performance following the completion of the West Coast Main Line Upgrade in December 2008. During the early part of the year approximately 80 per cent of trains were arriving on time, which was clearly not acceptable. Network Rail, working closely with train operators, therefore developed a plan to drive up performance. Our plan focussed on a series of initiatives including:

- faster replacement of the most unreliable equipment including points, power and signalling cables and track;
- daily performance reviews with train operators;
- managing faults and incidents more closely and reacting faster;
- trouble-shooters at key locations between London and Crewe to keep equipment working reliably;
- the deployment of a new Maintenance team to look after equipment at southern end of route;
- master-classes for Maintenance teams;
- extra critical spares on hand for troubleshooting teams;
- mobile generators to get cut power supplies back quickly;
- remote monitoring of vital equipment to predict potential problems; and
- ongoing crackdown on cable theft.

These initiatives were in the main very successful and performance throughout the Autumn and Winter months was encouraging. This encouraging level of performance has continued into early 2010/11 and we have agreed a Joint Performance Improvement Plan with Virgin Trains covering the first six months of this year.

Requests for gauging information by third parties

During 2009/10, Network Rail developed a plan to solve difficulties reported by stakeholders in accessing accurate gauge information, for example to enable the design of new trains. Network Rail's processes for providing this information were reviewed by the independent reporter (Asset Management Consulting Limited). This report highlighted areas for improvement and Network Rail developed a comprehensive response and a new strategy for handling gauge information in December 2009. This plan acknowledges the need to maintain accurate records of all capability parameters, both for Network Rail's own use and its stakeholders. Network Rail has committed to maintaining this capability into the future (subject only to agreed network change processes) so that its customers can plan their businesses with a reasonable degree of assurance.

Our strategy to address the concerns that have been raised by our stakeholders was endorsed by ORR on 1 March 2010 and work now continues to implement the strategy. As part of the implementation of this strategy we are also having regard to our service culture principles and we expect to be able to provide the industry with a clear statement of expected turn–around times for dealing with typical requests for information. We are also considering how we will apply the approach we have developed here to other areas of capability information, such as power supply.

Reducing disruptions as result of possession overruns

Following the engineering overruns that occurred at Rugby, London Liverpool Street and Shields Junction in January 2008, Network Rail developed a plan for reducing the level of disruption caused by engineering overruns. This plan was implemented in line with the timescales agreed with ORR, and subsequent audits by the independent reporter (Halcrow) have confirmed that the plan is robust and embedded in the organisation and that we are now in a state of continuous improvement. The reporter has made a number of recommendations to further reduce the likelihood and effect of engineering overruns and we will be considering and implementing these recommendations as necessary during 2010/11.

Since the January 2008 engineering overruns we have been closely monitoring delay and cancellation data (normalising the results to allow for fluctuations in expenditure) and we are pleased that there has been a significant reduction in disruption caused by engineering overruns. Compared to 2007/08 (the last year before our plan to reduce disruption caused by overruns was implemented) delays due to overruns were 56 per cent lower in 2009/10 and cancellations were 63 per cent lower.

Integrated train Planning System

During 2009/10 Network Rail implemented a new Integrated Train Planning System (ITPS). This system will bring about very significant benefits for both Network Rail and the wider industry, in that it will:

- help us better exploit existing network capacity;
- provide more efficient and robust timetables;
- allow more effective development of significant timetable changes; and
- reduce data handling and transaction processing and costly system interfaces.

However, whilst the long term benefits of ITPS cannot be underestimated the system has suffered from a number of teething problems that have regrettably caused some difficulties for train operators and their customers. These teething problems created delays in publishing pocket timetables for the May 2010 timetable change and led to some train services being 'invisible' to online users. Network Rail has and continues to work closely both with our customers and software suppliers to address the remaining system problems. The independent reporter (Arup) was instructed in May 2010 to review our plans for meeting the timetabling obligations in the short term and to examine whether we took appropriate steps so as to mitigate the risks associated with the roll-out of the new ITPS system and to identify any lessons that can be learnt to apply to future implementations of new IT systems. We are fully supportive of the need to undertake this review.

Winter performance

For much of 2009/10, the industry's overall performance in terms of punctuality (the public performance measure PPM), cancellations and significant lateness (CaSL), and delay was very good. After nine periods it seemed possible that the industry would end 2009/10 two years ahead of the improvement trajectories ORR set for CP4.

However, the severe winter that was experienced in Great Britain had a significant impact on performance. In January 2010 in particular, the British Isles faced the most severe winter in decades with temperatures dropping to a low of –22°C in the Scottish Highlands. Snow and ice covered large areas of the country for about three weeks – representing the longest continually cold period for almost 30 years. The severe weather caused widespread disruption to business activities across the country. Along with Britain's railway network, our highways, airports and other forms of public transport were severely affected by the adverse weather conditions.

As a result of these weather conditions, we missed five of the ten sector level regulated performance requirements for 2009/10 leading to an ORR investigation of the circumstances which led to these missed targets. We provided ORR with detailed evidence of the fact that the severity of the weather at times during the winter months was truly exceptional. ORR subsequently concluded that if the weather conditions were taken into account we could not reasonably have been expected to meet the regulatory performance targets set by ORR. ORR further accepted that had it not been for the severe weather experienced in Britain, we may well have delivered all the sector performance targets. ORR's investigation did, however, raise some concerns about how focussed we were on meeting the freight delay regulatory target. ORR has therefore confirmed that it will more closely monitor freight performance in 2010/11 and has invited us to partake in quarterly review meetings moving forward. We are currently in discussions with ORR about how best to take this forward.

Doing business with Network Rail

During the course of 2009/10, Network Rail completely overhauled what was previously known as our 'Dependant Persons Code of Practice'. The Code of Practice was a set of principles that explained the approach we took when entering into new business ventures with customers and other stakeholders.

Our new Code of Practice, entitled 'Doing business with us', aims to simplify the way we work with external stakeholders and potential customers. It has been created to be as straightforward as possible and is available on our website at the following web link:

http://www.networkrail.co.uk/aspx/1544.aspx

The new code of practice forms part of Network Rail's drive towards being a more service-orientated organisation, and is the first of many initiatives designed to improve the way we interact with customers.

Section 2 – Network capability, traffic and network availability

Introduction

This section reports on the capability of the network, passenger and freight traffic, and network availability through possession management.

Network capability

Data on four capability measures, including changes during the year, are reported in terms of

- C1 – linespeed;
- C2 – gauge;
- C3 – route availability value; and
- C4 – electrified track.

The 'running lines' for network capability purposes are derived from around a quarter of a million GEOGIS records. The linespeed and electrification information is part of that data, whereas gauge and route availability are assigned via reference tables. The capability data presented in this section includes actual changes to the network as well as changes as a result of data cleansing (review and subsequent amendment to data where necessary).

The Infrastructure Capability Programme encompasses:

- the verification of capability as published in the Sectional Appendix;
- the resolution of any identified discrepancies;
- improvement to the accessibility of capability information through publication of the National Electronic Sectional Appendix (NESA); and
- improved management processes so as to prevent the emergence of further discrepancies in the future.

For the key forward milestones, refer to the publication of measures in the NESA. This provides an indication of the development of the improved management processes by the end of 2009 and the resolution of discrepancies by the end of January 2010.

Linespeed capability (C1)

This is a measurement of the length of running track in kilometres in the following speed bands:

- up to 35 miles per hour;
- 40 to 75 miles per hour;
- 80 to 105 miles per hour; and
- 110 to 25 miles per hour.

The measure includes running lines and loops but excludes sidings and depots. Where differential speeds apply to a section of track, the highest linespeed applies for that section.

Results

Table 2.1: Linespeed capability (km of track in each speed band)

Speed Band (mph)	*March 2005*	*March 2006*	*March 2007*	*March 2008*	*March 2009*	*March 2010*
Up to 35	4,163	3,821	3,787	3,783	3,763	3,684
40 – 75	16,927	16,895	16,856	16,890	16,836	16,829
80 – 105	7,650	7,482	7,488	7,450	7,478	7,479
110 – 125	2,741	2,907	2,932	2,959	3,042	3,081
Total	**31,482**	**31,105**	**31,063**	**31,082**	**31,119**	**31,073**

Table 2.2: Linespeed capability by operating route (track km)

Speed band (mph) Operating Routes	*0–35*	*40–75*	*80–105*	*110–125*	*Total*
London North Eastern	705	3,211	830	933	5,679
Midland & Continental	190	711	538	316	1,755
London North Western North	559	2,661	510	437	4,167
London North Western South	363	1,284	578	682	2,907
Anglia	253	1,396	626	0	2,275
Kent	192	1,030	533	0	1,755
Sussex	116	753	257	0	1,126
Wessex	168	1,033	881	0	2,082
Western	677	2,347	1,622	492	5,138
England & Wales	3,223	14,426	6,375	2,860	26,884
Scotland	461	2,403	1,104	221	4,189
Network Total	**3,684**	**16,829**	**7,479**	**3,081**	**31,073**

Table 2.3: Linespeed change: increases

Route	Area	ELR	Track	Start Mileage	Length (miles.yds)	Old Speed Band	New Speed Band
EAN	AN	IPD	3300	(0.0035)	0.1135	new	0–35
LNE	GN	BTJ	1500	159.0330	0.0946	new	0–35
LNE	GN	BTJ	2851	159.0330	0.0946	new	0–35
LNE	GN	DDY	2801	154.0114	0.0286	new	0–35
LNE	GN	SPC9	1150	146.0000	0.1298	new	40–75
LNE	GN	SPC9	2150	146.0000	0.1298	new	40–75
LNE	NE	CFM	1500	10.0924	0.0528	0–35	40–75
LNE	NE	ECM5	1100	77.0000	0.0814	80–105	110–125
LNE	NE	NOC	3766	10.0332	0.0218	new	40–75
LNWN	CE	MIA	3603	0.0003	0.0319	new	0–35
LNWN	CE	SDJ2	1800	10.1419	0.0258	new	40–75
LNWN	CE	SDJ2	2800	10.1350	0.0327	new	40–75
LNWN	CE	WJL1	1100	181.1320	0.0616	40–75	80–105
LNWN	CE	WJL1	2100	174.1201	0.0998	new	80–105
LNWN	CE	WJL1	2100	181.1320	0.0616	40–75	80–105
LNWN	LC	CBC1	1100	16.1232	0.0550	0–35	40–75
LNWN	LC	CBC1	2100	16.1232	0.0550	0–35	40–75
LNWN	LC	CGJ7	1100	29.0066	3.1584	80–105	110–125
LNWN	LC	CGJ7	1100	51.1496	0.0220	80–105	110–125
LNWN	LC	CGJ7	2100	51.1232	0.0440	40–75	110–125
LNWN	LC	CGJ7	2100	67.1276	0.0902	80–105	110–125
LNWN	LC	DJH	1100	17.0638	0.0660	0–35	40–75
LNWN	LC	DJH	2100	17.0638	0.0660	0–35	40–75
LNWN	LC	EDE	3900	11.0063	0.0728	new	0–35
LNWN	LC	FCO	3400	12.0339	0.0234	new	40–75
LNWN	LC	GJH	3400	1.0130	1.1669	new	0–35
LNWN	LC	KMG2	2300	6.1604	0.1036	new	0–35
LNWN	LC	MSM	3101	0.0991	1.0549	new	40–75
LNWN	LC	MSM	3101	1.1540	0.0463	new	0–35
LNWN	LC	MSM	3102	0.1012	1.0528	new	40–75
LNWN	LC	MSM	3102	1.1540	0.0821	new	0–35
LNWN	LC	SAC	1100	280.1100	0.1606	0–35	40–75
LNWN	LC	SAC	2100	280.1100	0.1606	0–35	40–75
LNWS	WM	RRN1	1100	2.0374	0.0286	0–35	40–75
LNWS	WM	RRN1	2100	2.0220	0.0440	0–35	40–75
LNWS	WM	RRN2	1100	13.1100	0.0660	0–35	40–75
LNWS	WM	RRN2	2100	13.1144	0.0484	0–35	40–75
LNWS	WS	BBM	1900	11.1204	0.0666	new	0–35
LNWS	WS	CMD2	1100	18.1276	0.1320	40–75	80–105
LNWS	WS	CMD2	1100	19.1408	0.0616	0–35	40–75
LNWS	WS	CMD2	1300	18.0352	0.0792	0–35	40–75
LNWS	WS	CMD2	2100	19.1386	0.0638	0–35	40–75
LNWS	WS	CMD2	2300	18.0412	0.0248	new	40–75
LNWS	WS	CMD2	2900	16.0531	0.0688	new	0–35
LNWS	WS	CNN	1100	3.1000	5.1200	new	40–75
LNWS	WS	CNN	1500	4.0985	0.0576	new	0–35
LNWS	WS	CNN	2100	3.1000	5.1200	new	40–75
LNWS	WS	LEC1	1100	46.0814	0.0550	80–105	110–125
LNWS	WS	LEC1	3602	49.1191	0.0309	new	0–35
LNWS	WS	LEC2	1100	110.0840	6.0523	new	110–125
LNWS	WS	LEC2	1200	110.0276	0.0902	new	80–105
LNWS	WS	LEC2	2100	110.0840	6.0523	new	110–125
LNWS	WS	LEC2	2200	110.0276	0.0902	new	110–125

Table 2.3: Linespeed change: increases (continued)

Route	Area	ELR	Track	Start Mileage	Length (miles.yds)	Old Speed Band	New Speed Band
LNWS	WS	LEC2	2200	121.1254	5.0220	80–105	110–125
LNWS	WS	OXD	3100	1.0622	0.0258	new	0–35
MAC	EM	BCJ	2100	126.1510	0.0630	new	0–35
MAC	EM	KSL	2100	125.1298	1.0380	new	40–75
MAC	EM	PBS1	1100	133.0395	0.1068	new	40–75
MAC	EM	PBS1	2100	133.0392	0.1082	new	40–75
MAC	EM	PBS3	1100	142.0880	0.1562	0–35	40–75
MAC	EM	PBS3	2100	142.0660	1.0022	0–35	40–75
MAC	EM	SPC3	3200	66.1726	3.1244	new	80–105
MAC	EM	SPC5	1200	104.0088	0.0419	0–35	40–75
MAC	EM	SPC5	1200	117.1540	0.0330	0–35	40–75
MAC	EM	SPC5	2200	117.1540	0.0330	0–35	40–75
MAC	EM	SPC9	1150	142.0264	2.1188	new	80–105
MAC	EM	SPC9	1150	144.1452	1.0308	new	40–75
MAC	EM	SPC9	2150	142.0211	2.1703	new	80–105
MAC	EM	SPC9	2150	145.0154	0.1606	new	40–75
MAC	EM	TCC	1100	141.0525	0.0465	new	80–105
MAC	EM	TCC	1100	141.0990	0.0981	new	40–75
MAC	EM	TCC	2100	141.0527	0.0639	new	80–105
MAC	EM	TCC	2100	141.1166	0.0726	new	40–75
SCO	SE	CWH2	1100	0.0110	0.0594	0–35	40–75
SCO	SE	CWH2	2100	0.0110	0.0594	0–35	40–75
SCO	SE	CWH2	2100	0.1100	0.0440	0–35	40–75
SCO	SE	NBE	2100	25.0191	0.0861	new	40–75
SCO	SE	WCK	3400	129.0286	1.1276	40–75	80–105
SCO	SE	WCK	3400	131.1584	1.0880	40–75	80–105
SCO	SW	GBK	1100	13.0268	6.0039	new	40–75
SCO	SW	GBK	2100	13.0268	6.0039	new	40–75
SCO	SW	HST	1100	2.0374	0.0219	0–35	40–75
SCO	SW	HST	2100	2.0374	0.0434	0–35	40–75
SCO	SW	WCM2	2102	101.0882	0.0849	new	0–35
SCO	SW	WCM2	2208	101.1184	0.0594	new	0–35
SCO	SW	WCM2	3614	102.0019	0.0384	new	0–35
SCO	SW	WCM2	3615	102.0018	0.0389	new	0–35
SUS	SU	SCP	3603	7.0892	0.0340	new	0–35
SUS	SU	SCP	3605	7.0863	0.0354	new	0–35
WES	CY	ABD	1100	16.0660	0.0220	new	0–35
WES	CY	ABD	2100	16.0660	0.0220	new	0–35
WES	CY	BSW	1100	16.1307	0.0478	new	40–75
WES	CY	BSW	2100	16.0594	0.0701	new	40–75
WES	CY	BSW	2300	9.1254	0.0935	0–35	40–75
WES	CY	CAM	1100	16.0527	0.0353	new	0–35
WES	CY	CAM	1500	19.1496	1.1416	new	40–75
WES	CY	CAM	2100	16.0527	0.0353	new	0–35
WES	CY	GNQ1	3100	0.0352	0.0308	new	0–35
WES	CY	GNT	3100	10.0374	4.0933	new	0–35
WES	CY	GWA	3100	14.1307	1.1302	new	0–35
WES	CY	SWM2	1200	149.0510	0.0396	new	40–75
WES	WC	BSW	2300	9.0279	0.0975	0–35	40–75
WES	WC	YAT	2100	120.1474	0.0770	0–35	40–75
WEX	WE	GTW1	2100	30.0682	0.0286	0–35	40–75
WEX	WE	TBH2	1100	35.0770	0.1298	new	40–75
WEX	WE	TBH2	2100	35.0770	0.1298	new	40–75

Table 2.4: Linespeed change: decreases

Route	Area	ELR	Track	Start Mileage	Length (miles.yds)	Old Speed Band	New Speed Band
EAN	AN	DWW2	1100	3.1610	0.1162	0–35	removed
EAN	AN	DWW2	2100	3.1695	0.1077	0–35	removed
EAN	AN	GCD	3900	0.0000	1.0000	40–75	removed
EAN	AN	HAR	3300	95.0603	0.1047	0–35	removed
EAN	AN	IPD	3100	0.1100	1.0660	0–35	removed
EAN	AN	IPD	3500	1.0314	0.0404	0–35	removed
EAN	AN	MIT	3300	3.0242	0.0726	0–35	removed
EAN	AN	MSG2	3900	25.1430	0.1496	0–35	removed
EAN	AN	SOL	3300	35.0594	0.1540	0–35	removed
EAN	AN	TIR	1100	22.0132	0.0548	0–35	removed
EAN	AN	TIR	2100	22.0132	0.0528	0–35	removed
EAN	AN	TIR	3100	22.0682	0.0231	0–35	removed
EAN	AN	TIR	3601	22.0704	0.0242	0–35	removed
EAN	AN	TIR	3602	22.0682	0.0297	0–35	removed
EAN	AN	TIR	3603	22.0542	0.0448	0–35	removed
EAN	AN	TIR	3604	22.0556	0.0434	0–35	removed
EAN	AN	WIG	3400	86.0396	0.0484	0–35	removed
KNT	KE	ESJ	1100	21.0200	1.0262	40–75	removed
KNT	KE	ESJ	2100	21.0836	0.1716	40–75	removed
KNT	KE	HHH	1200	0.1231	0.1064	40–75	removed
KNT	KE	HHH	2200	0.1100	0.1210	40–75	removed
KNT	KE	HHH	2802	0.1004	0.0219	0–35	removed
KNT	KE	HHH	3601	0.0572	0.0324	0–35	removed
KNT	KE	HHH	3602	0.0572	0.0363	0–35	removed
KNT	KE	HHH	3603	0.0572	0.0363	0–35	removed
KNT	KE	VIR	2100	73.0880	0.0242	80–105	40–75
LNE	GN	BAC2	1300	150.0535	1.1687	0–35	removed
LNE	GN	BAC2	2300	150.0536	1.1686	0–35	removed
LNE	GN	BAC2	3300	149.0990	0.1305	0–35	removed
LNE	GN	FWR2	3401	152.0990	0.1210	0–35	removed
LNE	GN	HAC	3300	11.0440	3.0782	0–35	removed
LNE	GN	HAC	3500	14.0484	0.0593	0–35	removed
LNE	GN	MAC3	1801	55.1484	0.1033	0–35	removed
LNE	GN	MAC3	1802	55.0973	0.0401	0–35	removed
LNE	GN	MAC3	1802	55.1520	0.0997	0–35	removed
LNE	GN	MAC3	2802	55.1520	0.0372	0–35	removed
LNE	GN	NOB3	1100	41.0154	0.0308	40–75	0–35
LNE	GN	NOB3	2100	41.0154	0.0308	40–75	0–35
LNE	GN	OXO	3300	0.0000	1.0000	0–35	removed
LNE	GN	SEY	3300	151.1688	0.0732	0–35	removed
LNE	GN	SPC9	1300	146.0000	0.1298	40–75	removed
LNE	GN	SPC9	2300	146.0000	0.1298	40–75	removed
LNE	NE	BNW	3300	0.0000	0.0440	0–35	removed
LNE	NE	BOO	3300	5.1386	0.0748	0–35	removed
LNE	NE	ECM5	3801	44.0528	0.0214	40–75	0–35
LNE	NE	HEM	3100	20.1131	0.1248	0–35	removed
LNE	NE	HNB	3302	1.0977	0.0251	0–35	removed
LNWN	CE	CGJ1	2900	166.1207	0.0877	0–35	removed
LNWN	CE	CGJ1	3500	166.1523	0.1378	0–35	removed

Table 2.4: Linespeed change: decreases (continued)

Route	Area	ELR	Track	Start Mileage	Length (miles.yds)	Old Speed Band	New Speed Band
LNWN	CE	CGJ5	1200	0.1511	0.0205	40–75	0–35
LNWN	CE	EHW	3900	1.0000	0.1073	0–35	removed
LNWN	CE	EWG	3900	0.0000	0.1392	0–35	removed
LNWN	CE	LCN	1100	13.0990	0.0330	40–75	0–35
LNWN	CE	MPR2	1100	3.1012	2.0858	40–75	removed
LNWN	CE	MPR2	1100	6.0110	0.0212	0–35	removed
LNWN	CE	MPR2	2100	3.1012	2.0858	40–75	removed
LNWN	CE	MPR2	2100	6.0110	0.0212	0–35	removed
LNWN	CE	MPR3	1100	6.0396	0.1716	40–75	removed
LNWN	CE	MPR3	1100	7.0352	0.0792	0–35	removed
LNWN	CE	MPR3	1100	7.1144	2.0704	40–75	removed
LNWN	CE	MPR3	1100	10.0088	0.0429	0–35	removed
LNWN	CE	MPR3	2100	6.0330	1.0022	40–75	removed
LNWN	CE	MPR3	2100	7.0352	0.0792	0–35	removed
LNWN	CE	MPR3	2100	7.1144	2.0704	40–75	removed
LNWN	CE	MPR3	2100	10.0088	0.0429	0–35	removed
LNWN	CE	MPR3	3400	10.0517	0.0803	0–35	removed
LNWN	CE	MPR3	3400	10.1320	3.0396	40–75	removed
LNWN	CE	SHS1	1300	6.0656	0.0488	0–35	removed
LNWN	CE	SHS1	1300	6.1402	0.0718	0–35	removed
LNWN	CE	SHS1	2300	6.0656	0.0488	0–35	removed
LNWN	CE	SHS1	2300	6.1402	0.0718	0–35	removed
LNWN	CE	SHS1	3300	6.0088	0.0568	0–35	removed
LNWN	CE	SHS1	3300	6.1144	0.0258	0–35	removed
LNWN	CE	WJL1	1500	174.0540	0.1350	0–35	removed
LNWN	CE	WJL1	2500	174.1210	0.1170	40–75	removed
LNWN	LC	FCO	3600	12.0339	0.0234	40–75	removed
LNWN	LC	MSM	3100	0.0991	1.0549	40–75	removed
LNWN	LC	MSM	3100	1.1540	0.0463	0–35	removed
LNWN	LC	MSM	3200	0.1012	1.0528	40–75	removed
LNWN	LC	MSM	3200	1.1540	0.0821	0–35	removed
LNWN	LC	SJC	1100	0.0038	0.0644	0–35	removed
LNWN	LC	SJC	2100	0.0035	0.0647	0–35	removed
LNWN	LC	WPS	3400	14.1650	4.0034	0–35	removed
LNWS	WM	BJW3	3400	12.1401	3.1399	0–35	removed
LNWS	WM	BJW3	3900	12.1090	0.0311	0–35	removed
LNWS	WM	CNN	1100	3.1000	5.1200	40–75	removed
LNWS	WM	CNN	1500	4.0985	0.0576	0–35	removed
LNWS	WM	CNN	2100	3.1000	5.1200	40–75	removed
LNWS	WM	OWW	1100	146.0286	2.0144	0–35	removed
LNWS	WM	OWW	2100	146.0286	2.0144	0–35	removed
LNWS	WM	WGL	1100	0.0000	0.0817	0–35	removed
LNWS	WM	WGL	2100	0.0000	0.0758	0–35	removed
LNWS	WS	BBM	3100	11.1204	0.0666	0–35	removed
LNWS	WS	CMD1	3700	13.1746	0.0300	0–35	removed
LNWS	WS	CMD2	1300	16.1088	0.0256	0–35	removed
LNWS	WS	CMD2	1800	19.1559	0.0352	0–35	removed
LNWS	WS	CMD2	2300	16.0531	0.0784	0–35	removed
LNWS	WS	LEC1	1200	6.0000	0.0220	80–105	40–75

Table 2.4: Linespeed change: decreases (continued)

Route	Area	ELR	Track	Start Mileage	Length (miles.yds)	Old Speed Band	New Speed Band
MAC	EM	DEX	3400	125.0456	1.0542	0–35	removed
MAC	EM	GSM2	3100	90.1386	0.0489	80–105	40–75
MAC	EM	KSL	3400	97.0990	0.0809	40–75	0–35
MAC	EM	MCL	1100	0.0000	0.1276	0–35	removed
MAC	EM	MCL	2100	0.0000	0.1276	0–35	removed
MAC	EM	NGC	3400	0.0000	0.1352	0–35	removed
MAC	EM	RUD	3400	92.0570	0.0420	0–35	removed
MAC	EM	SPC1	1200	30.0682	0.0264	80–105	40–75
MAC	EM	SPC8	1100	145.0638	0.0242	110–125	80–105
MAC	EM	SPC9	1300	142.0264	0.0264	80–105	removed
MAC	EM	SPC9	1300	142.0528	3.1232	40–75	removed
MAC	EM	SPC9	2300	142.0211	2.1703	80–105	removed
MAC	EM	SPC9	2300	145.0154	0.1606	40–75	removed
MAC	EM	TCC	1300	133.0395	0.1068	40–75	removed
MAC	EM	TCC	1300	141.0525	0.0465	80–105	removed
MAC	EM	TCC	1300	141.0990	0.0981	40–75	removed
MAC	EM	TCC	2300	133.0392	0.1082	40–75	removed
MAC	EM	TCC	2300	141.0527	0.0639	80–105	removed
MAC	EM	TCC	2300	141.1166	0.0726	40–75	removed
SCO	SW	GBK	3400	13.0268	6.0039	40–75	removed
SCO	SW	GBK	3500	13.0268	0.0927	40–75	removed
SCO	SW	WCM2	2101	101.0882	0.0849	0–35	removed
SCO	SW	WCM2	2207	101.1184	0.0594	0–35	removed
SCO	SW	WCM2	3612	102.0162	0.0241	0–35	removed
SCO	SW	WCM2	3613	102.0018	0.0389	0–35	removed
SCO	SW	WCM2	3811	101.1676	0.0246	0–35	removed
SUS	SU	SCP	1100	7.0968	0.0264	40–75	0–35
SUS	SU	SCP	2100	7.0836	0.0396	40–75	0–35
SUS	SU	TBH2	1100	35.0770	0.1298	40–75	removed
SUS	SU	TBH2	2100	35.0770	0.1298	40–75	removed
WES	CY	ABD	3100	16.0446	0.0434	0–35	removed
WES	CY	BSW	1100	10.1298	0.0484	80–105	40–75
WES	CY	CAM	3100	16.0527	0.0353	0–35	removed
WES	CY	SWM2	1800	148.1470	0.1316	0–35	removed
WES	TV	SWY	1100	94.0748	0.0221	110–125	80–105
WES	TV	WQL	3100	2.0880	0.0288	0–35	removed
WES	WC	FAL2	3100	308.1628	0.0506	40–75	0–35
WEX	WE	WTQ	3400	168.0750	1.0284	0–35	removed
WEX	WE	WTQ	3601	169.1034	0.0352	0–35	removed
WEX	WE	WTQ	3602	169.1034	0.0374	0–35	removed

Notes supporting the commentary and Tables 2.3 and 2.4:

- Entries on the Coventry – Nuneaton line (CNN) represent Maintenance Delivery Unit transfer (same Operating Route) for 19 Km and are cancelled-out in the decreases Table 2.4, with no speed band effect.
- Entries around Clay Cross (SPC9, TCC) represent Track ID change for 17km and are cancelled-out in the decreases Table 2.4, with no speed band effect. Changed ELR near Pye Bridge Jct (TCC to PBS1) for 2 Km is self cancelling on the same Erewash Valley Line.
- Entries on the Morecambe branch (MSM) represent ID change for 5 Km and are cancelled-out in the decreases Table 2.4, with no speed band effect.
- Entries near Emsworth (TBH2) represent boundary change /transfer of Operating Route and are cancelled-out in the decreases Table 2.4,with no speed band effect.

Reporting confidence

This data taken from GEOGIS aligns with the Sectional Appendix and has an accuracy well within band 1 (within +/–1 per cent). Although the volume of change is generally insignificant to affect this there are minor shortcomings in the updating procedures and thus Reliability Band B, we therefore consider an overall confidence grading of B2 is applicable.

Commentary

The decrease in size of the reported network by 46 kilometres represents actual change and some GEOGIS data quality improvement initiatives. Changes include additions and removals, as follows:

Additions are shown in the increases table (Table 2.3) where old speed band is 'new', (however, since old ID may not be retained in a new configuration the decreases table may show a corresponding 'removed'):

- completion of West Coast Route modernisation, principally (LEC2) 22 km Trent Valley four-tracking;
- reopening Garnant branch (GNT, GWA), 10 km;
- track doubling near Stewarton (GBK), net 9 km;
- track trebling near Kettering (SPC3), 6 km;
- inclusion of Longtown MOD (GJH), 3 km; and
- track doubling Merthyr branch (CAM, ABD), net 3 km.

Removals are shown in decreases table (Table 2.4) where new speed band is 'removed', (however, since old ID may not be retained in a new configuration the increases table may show a corresponding 'new'), several of these represent data cleanse of remote branches, etc:

- transfer of Oldham – Rochdale (MPR2/3) to Metrolink, 27 km;
- closure of Seymour Goods line (BAC2, OXO, SEY), 10 km;
- closure near Dudley (OWW), 7 km;
- closure of Wyre Dock branch (WPS), 6 km;
- closure of Brownhills branch (BJW3), 6 km;
- closure of Harworth Colliery branch (HAC), 6 km;
- Blackfriars, Thameslink works (HHH), 3 km; and
- closure of Farringdon – Moorgate (MCL), 2 km.

Except for the network 'additions' and 'removals' there are few significant speed band changes to existing track.

Raised speed band changes:

- West Coast Route modernisation/data quality improvement to 110 – 125 mph: Rugeley Trent Valley (LEC2), 8 km; Tebay (CGJ7), 6 km;
- raise to 80 – 105 vice 40 – 75, towards Altnabreac (WCK), 5 km Sectional Appendix check;
- raise to 40 – 75 mph near Long Marton (SAC), 3 km; and
- raise to 40 – 75 mph near Mansfield Woodhouse (PBS3), 3 km.

Lowered speed band changes:

Only approximately 4 km had a reduced speed band of which 0.8 was associated with published change, the remainder being checking against Sectional Appendix of which 0.7 km near Saffron Lane (KSL) was the longest.

Gauge capability (C2)

This is a measurement of the length of route in kilometres capable of accepting different freight vehicle types and loads by reference to size (gauge). This measurement is reported against five gauge bands measuring height (h) and width (w) of the vehicle:

- W6 3338mm (h) and 2600mm (w)
- W7 3531mm (h) and 2438mm (w)
- W8 3618mm (h) and 2600mm (w)
- W9 3695mm (h) and 2600mm (w)
- W10 3900mm (h) and 2500mm (w)

A definition of these individual freight gauges can be found in Railway Group Standard GE/RT8073 (April 2008) 'Requirements for the Application of Standard Vehicle Gauges'. Reference to W6 in this report is actually to the W6A profile in the Standard. W6 or W6A, W7, W8 and W9 are broadly incremental.

Results

Table 2.5: Gauge capability (km of route in each gauge band)

Gauge Band	*March 2005*	*March 2006*	*March 2007*	*March 2008*	*March 2009*	*March 2010*
W6	4,955	4,771	4,746	4,669	5,050	5,406
W7	2,794	2,741	2,720	2,829	3,163	3,255
W8	5,648	5,504	5,496	5,408	4,852	4,318
W9	1,714	1,615	1,618	1,698	1,382	1,360
W10 and W6	6	6	6	6	6	0
W10 and W8	60	73	65	65	62	74
W10 and W9	939	1,100	1,138	1,139	1,299	1,340
Total	**16,116**	**15,810**	**15,789**	**15,814**	**15,814**	**15,753**

Table 2.6: Gauge capability by operating route

Gauge band	*W6*	*W7*	*W8*	*W9*	*W10 & W6*	*W10 & W8*	*W10 & W9*	*Total*
London North Eastern	813	323	869	625	0	0	59	2,689
Midland & Continental	246	225	227	0	0	0	0	698
London North Western	872	702	606	166	0	0	926	3,272
Anglia	286	5	508	131	0	74	184	1,188
Kent	551	129	92	43	0	0	0	815
Sussex	342	88	40	41	0	0	0	511
Wessex	574	286	170	11	0	0	0	1,041
Western	1,600	555	675	40	0	0	0	2,870
England and Wales	5,284	2,313	3,187	1,057	0	74	1169	13,084
Scotland	122	942	1,131	303	0	0	171	2,669
Network total	**5,406**	**3,255**	**4,318**	**1,360**	**0**	**74**	**1,340**	**15,753**

Reporting confidence

This data applied to GEOGIS aligns with the Sectional Appendix and has an accuracy well within band (+/–1 per cent). Although the volume of change is generally insignificant to affect this, the current process of publishing gauge in the Sectional Appendix is still exposing minor discrepancies in the data, and thus Reliability band B. We therefore consider an overall confidence grading of B2 is applicable.

Commentary

The network size reduction of 61 route kilometres includes:

Removals

- 17 km transfer Oldham – Rochdale to Metrolink;
- 7 km closure Seymour Goods line;
- 6 km closure Wyre Dock branch;
- 6 km closure Brownhills branch;
- 5 km closure Harworth Colliery branch;
- 3 km closure near Dudley;
- 2 km closure Weymouth Quay branch;
- 2 km closure St Helens – Sutton Oak; and
- 1 km closure Farringdon – Moorgate.

Additions

- 10 km reopening Garnant branch; and
- 3 km inclusion Longtown MOD.

Network Rail is in the process of publishing freight gauge capability in the Sectional Appendix. The project has involved checking many routes across the country, and has brought a number of problems to light. Some routes have been proved to be smaller than the capability previously reported, and the figures for W9, W8 and to a lesser extent W7 show a considerable reduction reflecting these changes. The project is not complete, further minor reductions will appear over the next few years, along with improvements as work undertaken to correct the capability occurs.

The majority of gauge changes are reductions on the Western Route, as a result of publishing the freight gauge capability in the Sectional Appendix.

Route availability value (C3)

Introduction

The infrastructure capability Route Availability measure is used to check the compatibility of the weight of trains with the strength of underline bridges.

The C3 measure is a measurement of the length of track in kilometres capable of accepting different loaded vehicle types by reference to the Route Availability (RA) value. This year the results are reported for the first time with greater granularity by individual RA value. To assist comparison with previous Annual Returns, the values are also summarised in the three RA value bands used in previous years.

For infrastructure the RA number represents the lesser of the maximum single axle weight or the maximum equivalent load effect of a whole vehicle for the capability of underline bridges on a route. The RA number for a route is specified in the definitive operating publication.

Vehicles are compatible with the capability of the infrastructure where the vehicle RA is less than or equal to the route RA. If not, it is necessary to consider more detailed information on the loading characteristics of the vehicle and detailed information on the strength of individual bridges to check compatibility.

This measure includes running lines only on Network Rail's infrastructure and excludes sidings and depots.

Results

Table 2.7: RA1 Structures route availability (km of track)

Route availability band	*March 2005*	*March 2006*	*March 2007*	*March 2008*	*March 2009*	*March 2010*	*March 2010 by individual RA band*
(1)						90	90
RA1	2,529[2]	2,309[2]	2,296[2]	3,991[2]	3,558[2]	3,168	19
RA2							36
RA3							190
RA4							669
RA5							1,403
RA6							851
RA7	26,319[3]	25,935[3]	25,928[3]	25,060[3]	25,591[3]	25,714[3]	1,969
RA8							21,594
RA9							2,151
RA10	2,634	2,861	2,839	2,031	1,970	2,101	2,101
Total	**31,482**	**31,105**	**31,063**	**31,082**	**31,119**	**31,073**	**31,073**

Notes:

1. RA value not reported, status of line being checked
2. RA1–6 and not reported
3. RA7–9

Table 2.8: RA2 Structures route availability by operating route (km of track)

RA bands/ Operating routes	*(1)*	*RA1*	*RA2*	*RA3*	*RA4*	*RA5*	*RA6*	*RA7*	*RA8*	*RA9*	*RA10*	*Total*
London North Eastern	27	–	36	10	–	5	134	164	3,143	2,094	66	5,679
Midland & Continental	1	–	–	–	–	9	–	7	1,735	3	–	1,755
London North Western North	5	–	–	–	–	2	9	338	3,813	–	–	4,167
London North Western South	42	–	–	–	–	–	–	222	2,643	–	–	2,907
Anglia	2	1	–	57	43	–	83	415	1,624	50	–	2,275
Kent	–	–	–	–	129	–	25	29	1,572	–	–	1,755
Sussex	–	–	–	–	261	–	45	23	797	–	–	1,126
Wessex	3	18	–	–	195	6	137	69	1,654	–	–	2,082
Western	7	–	–	5	41	442	411	492	3,740	–	–	5,138
England and Wales	87	19	36	72	669	464	844	1759	20,721	2,147	66	26,884
Scotland	3	–	–	118	–	939	7	210	873	4	2,035	4,189
Network Total	**90**	**19**	**36**	**190**	**669**	**1,403**	**851**	**1,969**	**21,594**	**2,151**	**2,101**	**31,073**

Note:

1. RA value not reported, status of line being checked

Commentary

The Annual Return for the C3 measure follows the approach adopted in the 2008 and 2009 Annual Returns with the reported values based on the work to verify Route Availability undertaken as part of the Infrastructure Capability Programme. The Annual Return 2008 first reported the results of this work and reflected the historic asset management approach of managing infrastructure for the traffic that ran, whereas with today's approach we also manage assets against published capability.

This year's Annual Return incorporates the action taken by Network Rail to address the results of the Infrastructure Capability Programme. As a result there is a net extra 123 km of RA 7-9 track and 131 km of RA10 track and a reduction of 390 km of track in RA 1-6 bands. The changes principally reflect improvements in Route Availability arising from the strengthening and reconstruction of rail bridges to restore capability and additional assessment undertaken on bridges.

The principal changes in Route Availability are:

- 45 km increase to RA8 from RA4 Ashford 'E' Junction to Canterbury West (ACR);
- 16 km increase to RA10 from RA5 Forres to Nairn (ANI3);
- 13 km net increase to RA10 from RA8 Granthouse to Monktonhall Junction (ECM8);
- 49 km increase to RA8 from RA3 North Stafford Junction to Uttoxeter (NSS);
- 41 km increase to RA7 from RA4 Wickford Junction to Southend Victoria (SSV);
- 42 km increase to RA8 from RA5 Aberthaw to Fords Junction (VOG); and
- 45 km increase to RA8 from RA7 LNW/Scotland Route Boundary (Cove LC) to Lockerbie (WCM1).

We continue to work with FOC and TOC representatives to identify the preferred options for addressing the remaining differences in Route Availability. At the end of the year the proposals for interim and long term actions to address the remaining differences in Route Availability were issued for industry consultation through the Network Change process. The proposals range from the restoration of capability to Short Term Network Change and Network Change. In all cases there is no effect on the flow of regular traffic and we work closely with FOC and TOC representatives to ensure that these traffic flows can be maintained, for example, by using the heavy axle weight procedures that permit freight traffic flows in excess of the published Route Availability.

The changes in the extent of the network reported in the C1 Linespeed capability measure are also reflected in the C3 measure with a net decrease of 46 track kilometres. The principal effects are the additional tracks installed as part of the West Coast Route modernisation (principally LEC2) 22 km Trent Valley four-tracking (RA8), reopening Garnant branch, 10 km (RA5), track doubling near Stewarton, net 9 km (RA10) and transfer of Oldham – Rochdale to Metrolink, 27 km (RA8) and closure near Dudley, 7 km (RA8).

Electrified track capability (C4)

Introduction

This is a measurement of the length of electrified track in kilometres in the following bands:

- overhead line at 25kV A.C.;
- overhead line at 1,500V D.C.; and
- 3rd rail 650/750V D.C.

The measurement includes the length of running track, including loops but excluding sidings and depots. Lengths of track with dual electrification are not double counted here, (i.e. they are not also shown within the respective electrification types). In addition, line that is not energised and permanently earthed is counted as non–electrified.

Results

Table 2.9: Electrification capability (km of electrified track)

	March 2005 km of electrified track	*March 2006 km of electrified track*	*March 2007 km of electrified track*	*March 2008 km of electrified track*	*March 2009 km of electrified track*	*March 2010 km of electrified track*
25 kV AC overhead	7,748	7,882	7,980	7,974	8,000	8,016
3rd rail 650/ 750V DC	4,497	4,493	4,484	4,481	4,481	4,475
Dual AC, overhead/3rd rail DC	35	39	38	40	40	36
1500V DC overhead	39	39	39	39	39	39
Total electrified	12,319	12,453	12,541	12,534	12,560	12,566
Non-electrified	19,163	18,652	18,522	18,548	18,559	18,507
Total	**31,482**	**31,105**	**31,063**	**31,082**	**31,119**	**31,073**

Table 2.10: Electrification capability by operating route

Electrification capability by Operating Route	*25 kV AC overhead*	*3rd rail 650/750V DC*	*Dual AC overhead/3rd rail DC*	*1500V DC overhead*	*Total electrified*	*Non-electrified*	*Total*
London North Eastern	2,023	9	0	39	2,071	3,608	5,679
Midland & Continental	348	0	0	0	348	1,407	1,755
London North Western North	1,210	236	2	0	1,448	2,719	4,167
London North Western South	1,617	55	7	0	1,679	1,228	2,907
Anglia	1,451	21	15	0	1,487	788	2,275
Kent	8	1,648	10	0	1,666	89	1,755
Sussex	1	1,031	2	0	1,034	92	1,126
Wessex	0	1,475	0	0	1,475	607	2,082
Western	103	0	0	0	103	5,035	5,138
England & Wales	6,761	4,475	36	39	11,311	15,573	26,884
Scotland	1,255	0	0	0	1,255	2,934	4,189
Network Total	**8,016**	**4,475**	**36**	**39**	**12,566**	**18,507**	**31,073**

Reporting confidence

This data is taken from GEOGIS and the relatively small volume of network change means the accuracy remains within band 1. However, some errors can arise when other GEOGIS parameters are edited and other process factors merit a reliability band of B, we therefore consider this to be a confidence grade of B2.

Commentary

The C1 Linespeed capabilities tables show where the extent of the network has changed with a net decrease of 46 track kilometres. Completion of West Coast modernisation is the principal contributor to the increase in AC electrification. Where there have been other significant enhancements, such as Garnant branch reopening, and various track doubling, these have been on non-electrified parts of the network. Most of the network reduction, including data quality related, is likewise non-electrified track. However, Thameslink related alterations at Blackfriars, plus further rationalisation of boundaries near Ebbsfleet and Stratford have reduced DC content together with overall data quality effects.

Passenger and freight mileage

The passenger and freight train mileage is calculated from the passenger and freight billing systems. It should be noted that these may differ slightly from the mileage figures used in calculations for train performance purposes as those are based on the train performance systems. For all other corporate purposes it is the mileage figures below which are used.

Passenger train miles

Passenger train mileage is defined as the number of miles travelled by revenue earning passenger trains. The passenger train miles are derived from the Track Access Billing System (TABS).

There was an increase of 3.77 per cent in total franchised passenger train miles between 2008/09 and 2009/10. Open access services experienced a decline, decreasing by 4.2 per cent between 2008/09 and 2009/10.

Table 2.11: Train mileage for passenger operators (millions)

Train Operator	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Arriva Trains Wales	12.5	13.3	13.4	13.8	14
c2c Rail	3.6	3.6	3.7	3.8	3.8
Central Trains	17.8	17.7	10.8	–	–
Chiltern Railways	5.1	5.4	5.6	5.8	5.6
Cross Country Trains	–	–	6.8	18.2	19
East Midlands Trains	–	–	4.6	12.1	13
First Capital Connect	0	11.7	13.9	14.1	14.4
First Great Western (inc. Heathrow Connect)	25.1	24.7	24.7	25.5	24.8
National Express East Coast	11.3	11.1	11.5	11.9	9.4
East Coast Main Line Rail	–	–	–	–	2.6
London Midland	–	–	4.3	12	13.7
London Overground	–	–	0.8	1.9	1.9
Merseyrail	3.4	3.4	3.4	3.5	3.5
Midland Mainline	6.2	6.2	3.8	–	–
Northern Rail	26	25.1	25.1	25.9	27.2
National Express East Anglia	18.5	18.9	18.8	19.1	18.9
First ScotRail	23.1	23	23.2	23.6	24.5
Silverlink Train Services	5.5	5.6	3.4	–	–
Southeastern	17.2	17.2	17.4	17.6	17.4
Stagecoach South Western Trains	23.1	22.9	23	23.4	23.4
Southern (inc. Gatwick Express)	19.9	18.2	18.7	19.7	20.5
Thameslink Rail	6.7	1.1	–	–	–
First Transpennine Express	7.9	8.6	8.9	9.6	9.9
Virgin Trains CrossCountry	16.8	16.9	10.6	–	–
Virgin Trains West Coast	13.3	13.2	14.4	16.7	21.2
West Anglia Great Northern Railway	6.9	1	–	–	–
Total Franchised Passenger	**269.9**	**268.8**	**270.8**	**278.2**	**288.7**
Eurostar (UK)	0.5	0.6	0.6	less than 0.1	less than 0.1
Heathrow Express	0.9	0.9	0.9	0.9	0.5
First Hull Trains	0.8	0.8	0.9	0.9	0.9
Nexus	1.8	1.8	1.8	1.8	1.9
Wrexham & Shropshire				0.6	0.5
Grand Central			0.1	0.5	0.7
Total Passenger (open access)	**4.1**	**4.1**	**4.2**	**4.7**	**4.5**
Total Passenger (franchised and open access)	**274**	**272.9**	**275**	**282.9**	**293.2**

Note: Empty coaching stock movements have been excluded.

Train mileage by freight operator

Freight train mileage is defined as the number of miles travelled by revenue earning freight trains (i.e. excluding engineering trains). The freight data for 2009/10 is derived from our new Track Access Billing System (TABS)

Gross Tonne Miles by freight train operator

Gross Tonne Miles (GTMs) is the mileage for each locomotive, wagon or coaching stock multiplied by the weight for each relevant vehicle. This data is also derived from the TABS system.

Commentary on freight gross tonne miles and freight train miles

Both freight gross tonne miles and freight train miles decreased between 2008/09 and 2009/10. The decrease in freight miles was 9.6 per cent and that for gross tonne miles was 15.5 per cent. The most significant freight commodities that experienced growth during the year were 'Mail and Premium Logistics' and 'Other', with the area of greatest decline being 'General Merchandise' traffic.

Table 2.12: Train mileage for freight operators (thousands)

Freight Operator	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Advenza	51	73	114	126	48
Direct Rail Services Ltd	1,022	1,255	1,285	1,431	1,447
DB Schenker	20,290	18,514	15,503	13,727	11,546
Freightliner Heavy Haul	3,310	3,584	4,126	4,566	3,968
Freightliner Ltd	5,541	5,519	5,472	5,362	5,299
First GB Railfreight	740	852	997	1,464	1,833
Fastline	–	95	110	404	269
FM Rail	–	20	83	–	–
Colas	–	10	127	115	185
Total	**30,954**	**29,922**	**27,772**	**27,195**	**24,595**

Notes:

- DB Schenker was known as EWS Railway Ltd prior to 1 January 2009
- The figures for 2008/9 have been re–stated.

Table 2.13: Million GTMs by freight train operators

Freight Operator	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Advenza	8	12	23	48	23
Direct Rail Services Ltd	608	901	1,090	1,271	1,221
DB Schenker	20,872	19,417	16,494	14,887	11,163
Freightliner Heavy Haul	3,395	3,851	4,476	5,204	4,137
Freightliner Ltd	5,223	5,179	5,241	5,174	5,291
GB Railfreight	667	828	1,145	1,375	1,747
Fastline	–	52	75	417	323
FM Rail	–	7	38	–	–
AMEC	–	5	68	63	134
Total	**30,773**	**30,252**	**28,650**	**28,439**	**24,039**

Note: DB Schenker was known as EWS Railway Ltd prior to 1 January 2009

Infrastructure Capability Programme

Introduction

The original remit of the Infrastructure Capability Programme (ICP) was to publish accurate information pertaining to the capability available across all Routes, and to highlight where the capability was not as understood. This information was also used to provide to ORR an indication of a baseline level of capability against which Network Rail would be held accountable through CP4. Where there were discrepancies to the understood capability these were to be made visible, an appropriate course of action defined following consultation with stakeholders, and remediation activity planned and delivered to enable baseline capability to be restored, if appropriate.

Where these discrepancies were a material change to the baseline (e.g. W8 reduced to W7, or RA10 reduced to RA5) this was recorded in a discrepancy register. This register formed the basis of monitoring the ICP's progress through its stakeholder group.

These discrepancies are being regularised through network change, or short term network change (STNC) and subsequent physical restoration, where appropriate.

This section of the Annual Return records the current key information from the ICP.

Discrepancies between actual and published capability identified by the Infrastructure Capability Programme (ICP)

Definition and reporting method

This information is taken from the Discrepancy Register, which is published alongside the National Electronic Sectional Appendix (NESA) and is updated on a regular basis. The Discrepancy Register comprises a comprehensive list of the differences between our published and actual capability identified by the Infrastructure Capability Programme.

Results

This is the first year in which this data has been published in the Annual Return. This information will be updated for any further discrepancies identified for LNW(N) following the completion of the latest survey analysis. The data shown is correct at 7 May 2010.

Commentary

In forthcoming years we expect the number of entries in this section to drop to zero as the discrepancies are either resolved physically and the Short-Term Network Changes (STNC) are withdrawn or expire, or in cases where there is insufficient business justification for physical remediation permanent Network Change is enabled.

Table 2.14 provides a list of all discrepancies between actual and published capability.

Table 2.14: Discrepancies between actual and published capability identified by the Infrastructure Capability Programme

Route	*Line of route*	*Section*	*Capability measure*	*Published status*	*Current status*
Anglia	EA1160	Bethnal Green East Jn To Bishops Stortford	RA	8	STNC proposed
Anglia	EA1380	Fenchurch Street To Shoeburyness	RA	8	Network Change proposed
Anglia	EA1380	Fenchurch Street To Shoeburyness	RA	8	Established 30.04.10
Anglia	EA1430	East Suffolk Jn To Oulton Broad North Jn	RA	7	STNC proposed
Anglia	EA1470	Oulton Broad North Jn To Lowestoft	Gauge	W8	STNC proposed January 2010
Kent	SO0110	Victoria (E)/9 Elms To Ramsgate (Via Herne Hill And Chatham)	RA	8	STNC proposed
Kent	SO130	Charing X/Cannon Street To Dover Priory	RA	7 (Over Bridge 7A) 8 (All Other Lines)	Network Change proposed
Kent	SO130	Charing X/Cannon Street To Dover Priory	RA	8	STNC proposed
Kent	SO130	Charing X/Cannon Street To Dover Priory	RA	8	STNC proposed
Kent	SO330	Nunhead To Hayes/Beckenham Jn	RA	8	Network Change proposed
LNE	LN101	King's Cross To Shaftholme Jn	RA	9	STNC proposed STNC ref. NC-G1-2010-ICP-RA-LNE 002
LNE	LN105	Moorgate To Finsbury Park	Gauge	W6a	Network Change issued November 2009
LNE	LN320	Derby To Chesterfield Via Belper	Gauge	W8	STNC proposed January 2010
LNE	LN3213	Moorgate To Kentish Town	Gauge	W6a	Network Change proposed January 2010
LNE	LN3520	Stenson Jn To Sheet Stores Jn	Gauge	W8	STNC proposed January 2010
LNE	LN3635	Nottingham To Allington Jns	Gauge	W8	STNC proposed January 2010
LNE	LN600	Doncaster, Black Carr Jn To Reston Gsp	RA	9	STNC proposed
LNE	LN634	Guisborough Jn To Whitby	RA	7	Established 30.04.10
LNE	LN646	Stillington Line	Gauge	W8	STNC proposed January 2010
LNE	LN664	Boldon East Curve	T	Out of use	Out of use
LNE	LN790	Clipstone W Jn/Clipstone E Jn – Rufford	T	No traffic	No traffic
LNE	LN804	Tapton Jn To Sheffield North	Gauge	W8	STNC proposed January 2010
LNE	LN838	Leeds, Armley Jn To York (Skelton Jn), Via Harrogate	RA	8	Established 30.04.10
LNE	LN854	Milford Jn To Altofts Jn	Gauge	W8	STNC proposed January 2010
LNE	LN860	Diggle To Huddersfield	Gauge	W8	STNC proposed January 2010
LNE	LN860	Thornhill Jn To Leeds, Holbeck East Jn	Gauge	W8	STNC proposed January 2010
LNE	LN860	Diggle Jn To Copley Hill East Jn	RA	9	STNC proposed
LNE	LN868	Wincobank Jn To Horbury Jn	RA	7	STNC proposed STNC ref. NC-G1-2010-ICP-RA-LNE 006
LNE	LN882	Pontefract Monkhill Down Goods Loop	T	Out of use	Out of use
LNE	LN926	Dockfield Jn To Esholt Jn	RA	5	STNC proposed
LNW	NW3001	Crewe North Jn To Chester East Jn	Gauge	W8	STNC proposed January 2010
LNW	NW3007	Dee Marsh To Bidston Dee Jn	Gauge	W6a	STNC proposed January 2010
LNW	NW7025	Manchester Victoria To Ashburys	Gauge	W9	STNC proposed January 2010

Table 2.14: Discrepancies between actual and published capability identified by the Infrastructure Capability Programme (continued)

Route	*Line of route*	*Section*	*Capability measure*	*Published status*	*Current status*
Scotland	SC001	Gretna Jn To Glasgow Central (Via Beattock)	RA	10	STNC proposed
Scotland	SC001	Gretna Jn To Glasgow Central (Via Beattock)	RA	10	STNC proposed
Scotland	SC003	Carstairs South Jn To Haymarket East Jn	RA	10	STNC proposed
Scotland	SC007	Midcalder Jn To Holytown (Via Shotts)	Gauge	W9	STNC proposed January 2010.
Scotland	SC007	Midcalder Jn To Holytown Jn	RA	10	STNC proposed
Scotland	SC011	Law Jn To Uddingston Jn (Via Holytown	RA	10	STNC proposed
Scotland	SC031	Dumfries To Kilmarnock Gb&K Jn	Gauge	W8	STNC proposed January 2010.
Scotland	SC051	Muirhouse Central Jn To Muirhouse North Jn (Via Cathcart)	RA	7	Network Change proposed
Scotland	SC059	Glasgow Central To Stranraer	RA	8	STNC proposed
Scotland	SC065	(I) Paisley To Gourock (Ii) Paisley To Gourock	RA	10 7	STNC proposed
Scotland	SC093	Garnqueen North Jn – Greenhill Lower Jn To Greenhill Lwr	Gauge	W9	STNC proposed January 2010
Scotland	SC109	Carmuirs West Jn To Carmuirs East JnCms	Gauge	W9	STNC proposed January 2010 NC/G1/2009/ICP-G/SC 002
Scotland	SC109	Carmuirs West Jn To Greenhill Lower Jn	Gauge	W9[R]	STNC proposed January 2010
Scotland	SC119	Carmuirs West Jn To Perth South Jn	Gauge	W8	STNC proposed January 2010
Scotland	SC123	Drumgelloch To Helensburgh (Via Singer) & Hyndland East Jn To Dalmuir (Via Yoker) Hyndland North Jn To Hyndland West Jn & Hyndland East Jn To Dalmuir (Via Yoker)	RA	10	STNC proposed
Scotland	SC123	Drumgelloch To Helensburgh (Via Singer)	RA	10	STNC proposed
Scotland	SC123	Drumgelloch To Helensburgh (Via Singer)	RA	8	STNC proposed
Scotland	SC136	Hyndland North Jn To Hyndland West Jn & Hyndland East Jn To Dalmuir (Via Yoker)	RA	10	STNC proposed
Scotland	SC143	Crianlarich To Oban	RA	5	STNC established 30.04.10
Scotland	SC147	Berwick To Haymarket West Jn (Via Waverley)	RA	10	STNC proposed
Scotland	SC165	Niddrie West Jn – Craiglockhart Jn (Edinburgh Suburban Line)	Gauge	W9	STNC proposed January 2010
Scotland	SC171	Princes Street Gardens – Haymarket Central	Gauge	W8	Network Change proposed Issued January 2010
Scotland	SC191	Dundee To Aberdeen	RA	10	STNC proposed
Scotland	SC193	Perth South Jn – Inverness (Highland Line)	Gauge	W8	STNC proposed January 2010
Scotland	SC193	Perth To Inverness	RA	8	Network Change proposed
Scotland	SC193	Perth To Inverness	RA	8	Network Change proposed
Sussex	SO500	Victoria To Brighton	RA	8	STNC proposed
Sussex	SO520	Three Bridges To Portsmouth Harbour (Via Horsham)	RA	8	STNC proposed STNC ref. NC-G1-2010-ICP-RA-SO 009

Table 2.14: Discrepancies between actual and published capability identified by the Infrastructure Capability Programme (continued)

Route	*Line of route*	*Section*	*Capability measure*	*Published status*	*Current status*
Sussex	SO530	South Croydon Jn To East Grinstead (Part)	RA	6	Network Change proposed
Sussex	SO540	Hurst Green Jn To Uckfield	RA	6	Network Change proposed
Sussex	SO600	Willingdon Jn To Ashford 'D' Jn	RA	7	Network Change established 30.04.10
Sussex	SO600	Willingdon Jn To Ashford 'D' Jn	RA	8	STNC proposed
Sussex	SO600	Willingdon Jn To Ashford 'D' Jn	RA	7	STNC proposed
Sussex	SO630	Brighton/Preston Park To Littlehampton	RA	8	STNC established 30.04.10
Sussex	SO680	South Bermondsey Jn To Horsham (Via Mitcham Jn)	RA	8	Network Change established 30.04.10
Sussex	SO680	South Bermondsey Jn To Horsham (Via Mitcham Jn)	RA	8	STNC proposed
Wessex	SO680	South Bermondsey Jn To Horsham (Via Mitcham Jn)	RA	8	STNC proposed
Wessex	SW105	Basingstoke To Northam	Gauge	W8	Restoration via W10 enhancement scheme
Wessex	SW105	Clapham Jn To Weymouth	RA	8	STNC proposed
Wessex	SW110	Woking Jn To Portsmouth Harbour/Cosham Jn WPH2	RA	7	Network Change proposed
Wessex	SW140	St Denys To Portcreek Jn	RA	7	Network Change established 30.04.10
Wessex	SW250	Staines To Windsor And Eton Riverside	RA	8	Network Change proposed
Western	GW184	Slough To Windsor & Eton	RA	6	STNC proposed
Western	GW400	Westerleigh To Barnt Green	Gauge	W8	STNC proposed January 2010
Western	GW715	Shrewsbury, Crewe Jn To Nantwich	Gauge	W8	Restoration within 6 months
Western	MD400	Droitwich Spa – Smethwick Junction (Via Hartlebury)	Gauge	W8	STNC proposed January 2010
Wessex	SW100	Waterloo To Clapham Jn/Linford Street	RA	8	STNC proposed
Wessex	SW110	Woking Jn To Portsmouth Harbour/Cosham Jn	RA	8	STNC proposed
Wessex	SW175	Castle Cary Jn To Dorchester Jn	RA	6	Established 30.04.10

Source: National Electronic Sectional Appendix

Short-Term Network Changes resulting from ICP and year of expiry

This information is taken from the internal processes used for monitoring the Short-Term Network Changes (STNC) issued in connection with the Infrastructure Capability Programme.

This is the first year in which this data has been published in the Annual Return. We will update this table annually for publication in the Annual Return. The data shown is correct at 11 May 2010.

In the immediate future we expect the number to increase as the STNCs necessary to regularize the discrepancies are enabled. However, in the medium term the number will fall away as the STNCs are withdrawn as the various remediations are completed.

Table 2.15: Number of Short-Term Network Changes

		Expiring by end March in each year				
	Total	***2011***	***2012***	***2013***	***2014***	***2015***
London North Eastern	10	0	8	1	1	0
London North Western	5	1	2	2	0	0
Midland & Continental	0	0	0	0	0	0
Anglia	1	0	0	1	0	0
Kent	1	1	0	0	0	0
Sussex	0	0	0	0	0	0
Wessex	3	2	0	0	1	0
Western	1	1	0	0	0	0
England and Wales	**21**	**5**	**10**	**4**	**2**	**0**
Scotland	2	0	0	0	1	1
Network Total	**23**	**5**	**10**	**4**	**3**	**1**

Permanent Network Changes completed resulting from ICP

Introduction

This information is taken from the internal processes used for monitoring the establishment of Network Changes issued in connection with the Infrastructure Capability Programme since November 2009 to the data extraction date of 7 May 2010.

This is the first year in which these data have been published in the Annual Return. We will update this table annually for publication in the Annual Return.

This initial view of permanent Network Changes established covers a period of less than 12 months. In forthcoming years this section will contain brief details of the Network Changes completed as part of the ICP during the 12 month period of the Annual Return year.

Table 2.16: Permanent network change

Route section	*Description of change*	*Date NC established*
SC115	Reduction from RA10 to RA8. No HAWP for RA9 / RA10.	30 April 2010
SC203	30mph Loco speed restriction and reduction from RA5 to RA3	30 April 2010
SW105	Loco hauled traffic restricted to 5mph over one bridge and reduction from RA8 to RA5.	30 April 2010
SW195	Loco hauled traffic restricted to 10mph over one bridge and reduction from RA8 to RA4 (Up only).	30 April 2010

Network availability

Introduction

The following section is new in the Annual Return and includes many network availability measures. The principal measures used are the Possession Disruption Index – Passenger, and Possession Disruption Index – Freight. As these are all new measures we have included explanations on the definitions and calculations for these measures.

Disruptions to passengers and freight as a result of planned engineering possessions

Possession Disruption Index – Passenger (PDI-P)

Definition and Reporting method

The Possession Disruption Index for Passengers measures the value of the impact of possessions on excess journey time as experienced by passengers.

This is calculated as (excess journey time x Busyness Factor) x (No. of passengers x time of day weighting x economic value of time) divided by (total scheduled passenger km).

Possession Disruption Index – Freight (PDI-F)

Definition and Reporting method

The Possession Disruption Index for Freight measures Track kilometre availability weighted by relative levels of freight traffic operated over each ELR.

This is calculated as Possession Disruption Index for freight = (Average freight tonne km per SRS divided by Average freight tonne km for network) x (Track km available divided by Total Track km).

Results

Table 2.17: Disruptions to passengers and freight as a result of planned engineering possessions

	2008/9 Planned	*2008/09 Actual*	*2009/10 Planned*	*2009/10 Actual*
Possession disruption index (Passenger) – (PDI- P)		0.87	1.02	0.63
Possession disruption index (freight) – (PDI-F)		1.16	1	0.82

Table 2.18: PDI-P for each TOC

	2008/09	*2009/10*
Arriva Trains Wales	1.05	0.99
c2c	1.15	1.14
The Chiltern Railway Co. Ltd	0.13	0.19
East Coast	0.76	0.32
Merseyrail Electrics 2002 Ltd	2.73	0.57
Northern Rail	0.49	0.26
National Express East Anglia	0.77	0.67
First ScotRail	0.59	0.32
South Eastern Trains Ltd	1.15	1.02
South West Trains Ltd	0.54	0.43
Southern	0.98	0.60
Transpennine Express	1.45	0.75
Virgin Trains	0.64	0.07
First Great Western	0.58	0.34
First Capital Connect	0.49	0.19
Heathrow Connect	0.77	0.08
CrossCountry	0.32	0.29
London Midland	0.44	0.10
London Overground	5.21	3.95
East Midlands Trains	1.32	0.55

Table 2.19: PDI-F for each FOC

	2008/09	*2009/10*
DB Schenker	1.17	0.79
Freightliner	1.16	0.86
Direct Rail Services	1.09	0.56
GB Rail Freight	1.12	0.99

The PDI-P at the end of the year improved by 27 per cent compared to 2008/09, reaching the regulatory requirement for the end of the control period. East Coast, First Capital Connect, Northern, London Midland and Virgin Trains showed significant improvements. Virgin Trains and Midlands benefited from the new access arrangements that were put in place on the West Coast route following the completion of the West Coast Route Modernisation programme.

In 2009/10 the PDI-F continued on an improving trend with better results reported compared to 2008/9. The MAA at the end of the year is the lowest since the KPI was introduced. Overall, Direct Rail services recorded the greatest improvement in 2009/10.

Data Confidence

The confidence ratings are B3 for both PDI-P and PDI-F.

The PDI-P and PDI-F data collation processes and models are now all documented. The production of the measures for PDI-P is currently a manual process, and for PDI-F it is a semi-automated process, and there are measures in place to migrate them to business objects solutions.

Commentary

The PDI-P ended the year at the regulated output level for the control period, however, the results during the second half of the year are on a deteriorating trend. The results follow a seasonal trend with higher levels of disruption planned during the winter months when demand for travel is generally lower.

Recent analysis of the metric has shown that London and South East operators and the smaller regional operators have a bigger influence on the national figure than the intercity operators. Further investigations are being undertaken on the weightings applied to the metric.

The PDI-P for Merseyrail, Transpennine and South Eastern reflect the increase in relative work volumes and seasonality of the possession plan. Merseyrail had higher levels of disruption compared to the previous year.

The PDI-P figures for South Eastern were affected by the East Kent re-signalling works.

During the course of the year in consultation with ATOC, Passenger Focus and the DfT, the route categorisation principles were developed. The route categorisation principles aim to keep passengers on trains rather than have their rail journey interrupted by a bus journey. We committed to work towards implementing these proposals in 2012.

The PDI-F at the start of the year was worse than the regulated output target but improved substantially during the course of the year and ended the year 40 per cent better than the previous year.

During the course of the year, the PDI-F Single Line Working weighting factor was introduced, which resulted in a slight worsening of the metric. We have a programme in place to increase the volume and efficiency of Single Line Working over the remainder of the control period.

Reduction in disruption to passengers and freight as a result of capital expenditure from the seven-day railway project

Commentary

The PR08 funding included an allowance of £220 million to improve network availability and facilitate the move towards a seven day railway. The seven-day railway spend is managed as part of Network Rail's internal investment management and reporting process. The implementation plan with details of the initiatives to deliver the regulated network availability output has been presented to ORR and is currently available on Network Rail's website. Progress against the implementation plan is reported through the industry governance group.

Progress this year

Over 30 projects have been identified and have authorised funding for option selection with a number of the projects progressing onto single option development and beyond.

Of the projects noted in the 2009 Delivery Plan the platform at Chesterfield is under construction, the Midland & Continental red zone initiatives and Cardiff area re-signalling are at GRIP 5, GRIP 4 papers are being prepared for the maintenance initiatives on the Kent and Sussex routes, the GRIP 3 outputs from the Waterloo to Weymouth and Didcot Swindon timetable studies are being reviewed, the Bath–Bristol signalling enhancement is planned for implementation in July 2011. The GRIP 3 outputs from the LNE schemes are being reviewed but the Crowle and Thorne crossovers and the wiring of crossovers are not being progressed as only limited benefits were identified. The GRIP 2 paper for the W10 diversion is being prepared.

Additional projects that have been authorised since the publication of the CP4 Delivery Plan update 2010 include maintenance initiatives on the Midland & Continental Thameslink route, Cotswold line turn back facility, purchase of rail clipping machines and Worcester stabling facility.

In addition to the above projects initial papers were being prepared for purchase of mobile flash butt welding, reversing the direction of a crossover between Pool and Wool, Hemel Hempstead staircase, Heathrow Connect turn back facility and an additional crossover at Stockley Bridge. All of these have now been approved.

During the course of the year additional requirements to meet the Route categorisation commitments to the Department for Transport were introduced and incorporated into the Network Availability plans. A Network Availability Implementation Plan was published in September 2009 and an updated version was published in March 2010.

Leading on from this we have now jointly developed with each of the TOCs a Joint Network Availability Implementation Plan (JNAPS) and these will be updated annually. We plan to start to develop similar documents with the freight operators and are working with the Rail Freight Group (RFG) to identify potential opportunities for freight customers to benefit from improved availability.

Levels of disruption to both passenger and freight services from planned engineering work have continued to reduce throughout the year. At the end of 2009/10 the disruption indices were already better than the regulatory requirements for the end of the control period.

At the end of each period we publish a report to the industry called the Possession Indicator report. This report contains measures around a number of metrics related to possessions and disruption to services. The key metrics have all shown an improvement during 2009/10.

Working timetable weekend compliance

Definition and reporting method

The Working timetable weekend compliance measures the percentage of train schedules ran and disrupted (cancelled or replaced by buses vs. the permanent timetable) per weekend, per TOC. The percentage proportion of schedules provided by buses over the weekend for each operator by period is calculated.

This is calculated as WTT compliance = (total no of schedules planned and run as trains / (total no of schedules planned and run as trains + bus schedules vs. permanent timetable + cancellations vs. the permanent timetable)) multiplied by 100 per cent.

Results

WTT weekend compliance figures showed an improvement of 1.49 per cent on the previous year. This improvement has been consistent with 11 out of 19 operators showing improvements in 2009/10. Virgin trains and First Transpennine Express reported the greatest gains from 2009/10.

Data confidence

The confidence rating is B3. The data collation and calculation model has been documented and is extracted directly from Trainplan.

Table 2.20: Percentage of the working timetable run by TOCs

	2008/09	*2009/10*
National	83.83%	85.32%
Arriva Trains Wales	91.46%	89.41%
CrossCountry	80.05%	85.74%
c2c Rail	75.75%	75.81%
East Midlands Trains	84.01%	87.18%
First Capital Connect	82.41%	86.45%
First Great Western	86.99%	88.76%
First ScotRail	91.77%	91.69%
London Midland	86.10%	92.31%
London Overground	75.70%	67.32%
Merseyrail	91.20%	88.36%
Northern Rail	91.51%	94.53%
National Express East Anglia	78.28%	77.45%
National Express East Coast *	83.04%	91.02%
Southeastern	81.11%	80.25%
Southern (including Gatwick Express)	81.10%	83.38%
Stagecoach South Western	84.43%	82.82%
Chiltern Railways	83.24%	82.20%
First Transpennine Express	79.02%	91.66%
Virgin Trains	71.83%	89.09%

* National Express East Coast was replaced by East Coast Main Line on 11 November 2009, it is a directly operated service

Commentary

Recent rail passenger surveys have shown a growing dissatisfaction in the use of rail replacement bus services especially at weekends. The WTT indicator was set up as an internal measure to focus Network Rail on reversing the growing trend in the use of rail replacement bus services. This measure is published in the possession disruption report which is circulated to the industry each period.

The indicator also serves to support the reduction in disruption from our engineering work as measured by the Possession Disruption Index for passengers (PDI-P).

Since the measure was introduced, it has continued to improve with an improvement of 1.4 per cent at the end of 2009/10. Of particular note are the improvements seen on the West Coast mainline since the introduction of the new Very High Frequency timetable in December 2008 which required minimal service disruptions. This has provided a high level of weekend availability to operators served by this route and is reflected in the 2009/10 WTT weekend figures for Virgin Trains and First Transpennine Express.

There were some noticeable periods where some operators did not run any rail replacement bus services.

Rail replacement bus hours

Definition and reporting method

This is the number of weekend rail replacement bus service hours operated due to possessions obtained by calculating scheduled arrival time subtracting the scheduled departure time for all TOCs.

This is calculated as Rail Replacement Bus Hours = (Scheduled departure time – Scheduled arrival time) summed over all TOCs. The measure is calculated using the number of buses bid for by each TOC and the departure and arrival times of trains at their destination. The sum of the scheduled journey time (difference between scheduled arrival and departure times) for each operator is then calculated for the period.

Data confidence

The confidence rating for Rail Replacement bus hours is B3.

The data collation and calculation model has been documented. However this measure does not currently cover long term buses. It is anticipated that Long term buses would be included in reports following the introduction of the new Integrated Train Planning System (ITPS).

Results

During the year, there was a steady decline in the number of replacement bus hours reported with an improvement of 19 per cent on the previous year, with 13 of 19 operators reporting significant improvements during the course of the year.

There was a significant increase in the use of rail replacement bus services as a result of the works to upgrade the North London line. This is shown in the results for London Overground. The level of rail replacement bus services on Arriva Trains Wales and Chiltern Railways increased by 39 per cent and 43 per cent respectively.

Table 2.21: Number of Rail replacement bus service hours

	2008/09 (hours)	*2009/10 (hours)*
Arriva Trains Wales	346	479
CrossCountry	614	279
c2c Rail	264	265
East Midlands Trains	381	309
First Capital Connect	486	239
First Great Western	1,205	764
First ScotRail	867	634
London Midland	761	359
London Overground	403	745
Merseyrail	307	168
Northern Rail	1,050	696
National Express East Anglia	2,150	1,823
National Express East Coast *	366	121
Southeastern	1,235	1,441
Southern (including Gatwick Express)	1,640	1,465
Stagecoach South Western	1,381	1,584
Chiltern Railways	92	131
First Transpennine Express	740	166
Virgin Trains	432	209
Total	**14,728**	**11,886**

Note: *National Express East Coast was replaced by East Coast Main Line on 11 November 2009, it is a directly operated service

Commentary

This metric was introduced in 2008/09 as a secondary measure in support of the Working Timetable (WTT) weekend compliance measure to avoid inconsistent actions and is reported periodically in the possessions disruption indicator report. The metric does not include rail replacement buses that are included for periods in the permanent timetable.

The high level of rail bus replacement services on Chiltern Railway is as a result of the Evergreen 3 project. Virgin Trains saw a significant reduction in the rail replacement bus hours following the introduction of the New Very High Frequency timetable in December 2008 which required minimal disruption to the published timetable.

Possession notification discount factor

Definition and reporting method

This is the percentage number of payments for each discount factor. It is calculated using the Schedule 4 calculation scheme together with background information on late notifications.

Results

There was an improvement in the possessions applied for prior to the first working timetable with the year starting at a periodic value of 86.6 per cent and ending at 93.8 per cent. The year also showed reductions in possessions requested between the first working timetable, T-12 (12 weeks prior to when the train service is scheduled to run) and after T-12.

Commentary

During the year, it was observed that late possessions tend to be related to maintenance or enhancement project work rather than renewals work.

During the latter part of 2009/10, the impact of flooding and snow in Periods 10 and 11 resulted in the introduction of emergency timetables. This led to a number of possession requests being made outside of the notification discount period.

Table 2.22: Possession notification discount factor

	2008/09 (see note) MAA	*2009/10 MAA*
Prior to First Working Timetable	88.70%	86.80%
T-12 Timetable	7.20%	6.70%
Post T-12 Timetable	4.10%	6.50%

Note: MAA shown in 2008/9 is average of 6 periods as data was only available for periods 8 to 13 in 2008/9.

Late possession changes

Definition and reporting method

This is calculated as the number of new, cancelled, curtailed or extended disruptive possessions that were agreed between the issue of the Confirmed Period Possession Plan (CPPP) and before the issue of the Weekly Operating Notice (WON), that caused the disruptive element of the possession to be increased or reduced, divided by the total number of possessions recorded in the relevant period.

The number of agreed late disruptive possession changes is divided by the total number of disruptive possessions recorded in the relevant period to produce the measure.

Data confidence

The confidence rating for is B3. The data collation and calculation model has been documented and the definition of the measure has been communicated to the data source providers. There are processes in place to ensure complete data sets are reported each period.

Results

The measure continues to improve with an average of 97.8 per cent disruptive possessions booked before CPPP. There was an increase in the number of disruptive possessions requested in the later part of 2009/10.

Commentary

As a result of Chiltern's Evergreen 3 project there was an increase in the number of new disruptive possessions requested in the later part of 2009/10.

It is anticipated that there would be an increase in the number of cancelled disruptive possessions which would translate into requests for new disruptive possessions over the next few periods in 2010/11 as a result of Jarvis going into administration.

Table 2.23: Late possession changes

	2008/09 MAA	*2009/10 MAA*
Number of disruptive possessions changes post CPPP	1.1%	1.6%

Note: MAA shown in 2008/9 is average of 3 periods as data was only available for periods 11 to 13 in 2008/9.

Very late possession changes

Definition and reporting method

This is calculated as the number of new, cancelled, curtailed or extended disruptive possessions that were agreed after the issue of the Weekly Operating Notice (WON) that caused the disruptive element of the possession to be increased or reduced.

The number of agreed very late disruptive possession changes is divided by the total number of disruptive possessions recorded in the relevant period to produce the measure.

This measure is similar to the late possession changes measure.

Results

During the course of the year, the measure improved by a factor of 10 per cent, this was masked by deterioration until period 5, followed by a low number of very late notice disruptive possessions between periods 6 and 10.

Data confidence

The confidence rating is B3. This is because the data collation and calculation model has been documented and there are processes in place to ensure complete data sets are reported each period.

Commentary

This is a new measure that was introduced at the request of ORR at the start of CP4. The measure is reported as part of the periodic possession disruption indicator report.

Table 2.24: Very late possession changes

	2008/09 (see note) MAA	*2009/10 MAA*
Number of disruptive possession changes post WON	0.60%	0.60%

Note: MAA shown in 2008/9 is average of 3 periods as data was only available for periods 11 to 13 in 2008/9.

Delay minutes and cancellation minutes due to possession overruns

Delay minutes due to possession overrun

Definition and reporting method

This indicator is defined as the Delay minutes per 100 train kilometres run due to possession overruns.

This is calculated as the total delay minutes attributed to possession over-runs divided by scheduled train-km.

The measurement unit is “delay minutes per 100 train-km”.

Cancellation minutes due to possession overrun

Definition and reporting method

This is the number of equivalent deemed minutes per 100 train kilometres run caused by cancellations due to possession overruns.

The calculation is delay minutes divided by train km multiplied by 100.

Results

The number of delay minutes due to possession overruns continued on a downward (improving) trend in 2009/10 with Periods one through to seven reporting the lowest ever period by period values of delay minutes.

The cancellations minutes due to possession started the year at its lowest ever level and has remained reasonably constant throughout the year.

Data confidence

The confidence rating for delay and cancellation minutes due to possession overruns is A1 as the process is automated.

Commentary

The measures are both at historic lows and this is in part due to the management focus that has been applied to possession overruns. Although there was a 0.35 per cent drop in possession volumes in 2009/10, this has not had a material impact on the measure. However, the location of overruns in the latter part of the year has had a greater performance delay impact. Where overruns have occurred, the result has been larger number of cancellation minutes reported compared to the same period in the previous years.

Network Rail has introduced processes to manage the risk to ensure higher productivity work is consistently delivered.

Table 2.25: Delay minutes and cancellation minutes due to possession overruns

	Delay minutes due to possession overruns 2008/09	*Cancellation minutes due to possession overruns 2008/09*	*Delay minutes due to possession overruns 2009/10*	*Cancellation minutes due to possession overruns 2009/10*
Network average	0.032	0.009	0.026	0.011
Anglia	0.052	0.013	0.048	0.025
Kent	0.040	0.014	0.039	0.017
London North Eastern	0.019	0.004	0.029	0.008
London North Western	0.046	0.013	0.015	0.005
Midland & Continental	0.012	0.008	0.011	0.007
Scotland	0.010	0.002	0.019	0.004
Sussex	0.021	0.007	0.032	0.020
Wessex	0.038	0.011	0.034	0.013
Western	0.025	0.005	0.025	0.004

Section 3 – Asset management

Introduction

This section reports data on the condition and quality of our assets. It provides an indication of our asset stewardship and trends over time as well as progress against targets. The following measures are reported:

- broken rails;
- rail defects;
- track geometry quality;
- condition of asset temporary speed restrictions (TSRs);
- track geometry faults;
- earthwork failures;
- bridge condition;
- tunnel condition;
- signalling failures;
- signalling asset condition;
- AC traction power incidents;
- DC traction power incidents;
- AC traction substation condition;
- DC traction substation condition;
- AC contact system condition;
- DC contact system condition;
- station stewardship measure; and
- light maintenance depot stewardship measure.

The station stewardship measure is the only measure in this section to have a regulatory target. Table 4.7 of the ORR's Determination of Network Rail's outputs and funding for 2009–14 reflected our forecasts for a range of condition / reliability measures at the time of the Initial Strategic Business Plan, and again in the CP4 Delivery Plan and its subsequent update. It should be noted that these measures help provide an indication of underlying trends in changes to asset condition rather than representing an absolute assessment. We are currently working with ORR and the independent reporter for asset management to identify any improvements that can be made to the suite of measures in use. The targets for most of these measures are reflected in Appendix 16 (Condition forecasts for the network) in the CP4 Delivery Plan.

Tunnel condition is a new measure, introduced during the year, and reported for the first time in the Annual Return. We have also made changes in the way we report some of our existing measures to reflect the requirements of the new control period.

Broken rails (M1)

Definition

A broken rail is one which, before removal from the track, has a fracture through the full cross-section, or a piece broken out of it, rendering it unserviceable. This includes broken welds. Only broken rails occurring in running lines are included in this measure (i.e. sidings, depots, etc are excluded).

Reporting confidence

The procedure for reporting broken rails is proven and robust, and this data justifies an A1 confidence grade. The roll out of the new Rail Defect Management System (RDMS), completed in December 2008, enabled standardised reports for the numbers and types of broken rail to be produced straight from RDMS for the year starting April 2009 onwards. The procedure for collecting, confirming and collating the numbers of broken rails has been in place for five reporting years, and is now supported by RDMS.

Commentary

The final year end figure for 2009/10 of 152 was a 7.8 per cent improvement over the previous year's total, which was revised from 164 (as previously reported in the 2009 Annual Return) to 165 due to the inclusion of one extra break reported and entered late into RDMS for the Midlands and Continental total.

Improved rail management, particularly inspection procedures and the increasing use of train-based ultrasonic testing on the network, the continued focus on dip angles at rail joints and a national grinding programme for plain line and S&C have all contributed to slight improvements.

The final number of broken rails for the year of 152 continues the year-on-year reduction from 952 in 1999/2000, an overall reduction of over 84 per cent. This reduction has also continued despite experiencing a more severe winter than we have had for many years.

Results

Table 3.1: Number of broken rails by operating route

Operating Routes	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
London North Eastern	85	56	54	38	43
Midland and Continental	13	6	13	8	8
London North Western North	40	30	15	16	21
London North Western South	12	14	13	8	7
Anglia	23	13	26	18	9
Kent	17	8	10	16	9
Sussex	7	13	6	8	8
Wessex	37	18	17	17	13
Western	37	13	13	19	14
England & Wales	**271**	**171**	**167**	**148**	**132**
Scotland	**46**	**21**	**14**	**17**	**20**
Network Total	**317**	**192**	**181**	**165**	**152**
confidence grade	A2	A1	A1	A1	A1

Table 3.2: Number of broken rails by route classification

Route Classification	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
Primary and key London & South East	145	94	98	81	77
Secondary, other London & South East and freight trunk	149	88	70	70	62
Rural and freight only	23	10	13	14	13
Network Total	**317**	**192**	**181**	**165**	**152**
confidence grade	A2	A1	A1	A1	A1

Rail defects (M2)

Definition

A defective rail is a rail that has any fault requiring remedial action (repair or replacement) to make it fit for purpose in accordance with NR/SP/TRK/001 and other Network Rail standards. This measure is reported as isolated defects (those defects with a length of less than one yard, such as midrail, welds, isolated wheelburns) and continuous defects (those defects with a length of one yard or more, such as rolling contact fatigue (RCF), wheelburns, hydrogen shatter cracking, vertical longitudinal splits).

Results

The following tables (Table 3.3 to 3.12) show the results for the different measures of rail defects. These include the number of isolated rail defects by operating route (Table 3.3), the lengths of continuous rail defects remaining in yards and kilometres for the whole network (Table 3.7), and rolling contact fatigue in plain line track, classified as severe, by operating route, also in yards (Table 3.10).

Table 3.3: Isolated rail defects by operating route

Operating Routes	*Defects identified 2008/09*	*Defects removed/ repaired 2008/09*	*Defects remaining 2008/09*	*Defects identified 2009/10*	*Defects removed/ repaired 2009/10*	*Defects remaining 2009/10*
London North Eastern	4,418	3,966	860	2,928	3,015	773
Midland and Continental	949	711	407	737	896	248
London North Western North	8,392	7,019	3,177	4,049	6,096	1,130
London North Western South				1,841	803	1,038
Anglia	2,879	2,374	773	1,667	2,108	332
Kent	1,042	822	251	952	918	285
Sussex	914	782	136	661	640	157
Wessex	1,770	1,436	351	1,068	1,221	198
Western	5,576	2,746	1,052	3,738	3,971	819
England & Wales	**25,940**	**19,856**	**7,007**	**17,641**	**19,668**	**4,980**
Scotland	**2,962**	**1,576**	**1,351**	**2,848**	**2,790**	**1,409**
Network Total	**28,902**	**21,432**	**8,358**	**20,489**	**22,458**	**6,389**

Table 3.4: Immediate action isolated defects per 100km identified during the year by operating route

Operating Routes	*2008/09*	*2009/10*
London North Eastern	6.98	4.56
Midland and Continental	3.88	4.05
London North Western North	9.04	7.47
London North Western South	6.42	5.76
Anglia	4.38	3.28
Kent	7.96	5.86
Sussex	5.60	3.55
Wessex	9.53	6.53
Western	4.88	5.53
England & Wales	**6.62**	**5.38**
Scotland	**4.01**	**6.47**
Network Total	**6.27**	**5.53**

Table 3.5: Immediate action isolated defects per 100km identified during the year by route classification		
Route Classification	***2008/09***	***2009/10***
Primary and key London & South East	8.34	6.43
Secondary, other London & South East and freight trunk	5.10	4.44
Rural and freight only	4.17	6.31
Network Total	**6.27**	**5.53**

Table 3.6: Lengths of continuous rail defects for 2009/10 (excluding RCF data)				
	Defects remaining at 2008/09 (excl. RCF)*	***Defects identified***	***Defective Rail removed/ repaired***	***Defects remaining at Year End***
Total length (yards)	121,738	121,895	142,617	101,016
Total length (km)	111	111	130	92

Note: *Prior to 2009/10 continuous defects numbers included Rolling Contact Fatigue (RCF). RCF is a condition and not necessarily a defect or actionable – now shown separately

Table 3.7: Lengths of continuous rail defects remaining				(defects excluding RCF)	
	2006/07	***2007/08***	***2008/09***	***2008/09***	***2009/10***
Total length (yards)	2,195,541	2,010,831	1,399,634	121,738	101,016
Total length (km)	2,008	1,839	1,280	111	92

Note: *Prior to 2009/10 continuous defects numbers included Rolling Contact Fatigue (RCF). RCF is a condition and not necessarily a defect or actionable – now shown separately

Table 3.8: Continuous rail defects by operating route (yards)				(defects excluding RCF data)			
Operating Routes	***Defects Identified 2008/09***	***Defects removed/ repaired 2008/09***	***Defects remaining 2008/09***	***Defects remaining 2008/09 excl. RCF***	***Defects identified 2009/10***	***Defects removed/ repaired 2009/10***	***Defects remaining 2009/10***
London North Eastern	51,950	49,947	26,535	12,428	20,971	25,641	7,758
Midland and Continental	5,076	5,702	960	1,048	1,635	1,774	909
London North Western North	95,670	39,777	226,207	35,660	17,344	22,045	30,959
London North Western South				2,082	7,412	7,381	2,113
Anglia	22,250	19,647	127,025	5,530	19,296	16,499	8,327
Kent	6,558	10,773	165,758	901	12,838	9,320	4,419
Sussex	2,606	1,455	1,269	1,410	4,492	4,620	1,282
Wessex	11,377	6,254	160,147	2,181	3,596	3,759	2,018
Western	23,006	28,020	57,026	16,190	21,924	28,675	9,439
England & Wales	**218,493**	**161,575**	**764,927**	**77,430**	**109,508**	**119,714**	**67,224**
Scotland	**19,447**	**20,044**	**634,707**	**44,308**	**12,387**	**22,903**	**33,792**
Network Total	**237,940**	**181,619**	**1,399,634**	**121,738**	**121,895**	**142,617**	**101,016**

Note: *Prior to 2009/10 continuous defects numbers included Rolling Contact Fatigue (RCF). RCF is a condition and not necessarily a defect or actionable – now shown separately

Table 3.9: Rolling contact fatigue in plain line classified as heavy by operating route (yards)		
Operating Routes	***2008/09***	***2009/10***
London North Eastern	94,124	93,011
Midland and Continental	7,020	4,544
London North Western North	8,988	6,200
London North Western South	57,501	76,799
Anglia	14,874	17,758
Kent	26,540	20,880
Sussex	7,194	6,226
Wessex	32,592	29,096
Western	39,127	34,898
England & Wales	**287,960**	**289,412**
Scotland	**31,279**	**27,488**
Network Total	**319,239**	**316,900**

Table 3.10: Rolling contact fatigue in plain line classified as severe by operating route (yards)		
Operating Routes	***2008/09***	***2009/10***
London North Eastern	32,804	31,035
Midland and Continental	6,574	4,928
London North Western North	7,387	7,803
London North Western South	5,213	5,209
Anglia	2,730	4,316
Kent	31,634	24,671
Sussex	1,078	814
Wessex	23,834	17,609
Western	14,815	15,454
England & Wales	**126,069**	**111,839**
Scotland	**8,255**	**13,969**
Network Total	**140,884**	**125,808**

Table 3.11: Rolling contact fatigue in S&C classified as heavy by operating route (number of components)		
Operating Routes	***2008/09***	***2009/10***
London North Eastern	322	505
Midland and Continental	18	24
London North Western North	158	197
London North Western South	281	294
Anglia	38	55
Kent	150	126
Sussex	52	52
Wessex	194	206
Western	92	88
England & Wales	**1,305**	**1,547**
Scotland	**196**	**247**
Network Total	**1,501**	**1,794**

Table 3.12: Rolling contact fatigue in S&C classified as severe by operating route (number of components)		
Operating Routes	***2008/09***	***2009/10***
London North Eastern	160	224
Midland and Continental	57	50
London North Western North	188	156
London North Western South	31	44
Anglia	15	19
Kent	191	155
Sussex	14	7
Wessex	408	338
Western	102	121
England & Wales	**1,166**	**1,114**
Scotland	**106**	**149**
Network Total	**1,272**	**1,263**

Reporting confidence

The procedure and systems for reporting defective rails justifies a B3 confidence grade. The roll out of the new Rail Defect Management System RDMS, completed in December 2008, enabled standardised reports for the numbers and types of defective rail to be produced straight from RDMS for the year starting April 2009 onwards.

Commentary

There is additional information in this year's Annual Return which has not previously been reported. This has been produced from RDMS which allows a more detailed breakdown of defect data in a more consistent way across the whole network.

Table 3.3 shows defects remaining in track have decreased due to an increase in the number of defects removed and a decrease in the number of defects identified. This is a result of good rail management with rail replacement focussed on the removal of defective rail, new more efficient rail defect repair methods and continued rail grinding to help prevent the initiation and growth of surface defects.

Tables 3.4 and 3.5 are new tables not previously reported in the Annual Return and have been introduced to show the number of immediate action defects identified per 100km of track by route and specific route classification. Immediate action defects are those which require the immediate imposition of an emergency speed restriction due to their severity when identified. These tables show a significant reduction in immediate action defects per 100km on Primary and Secondary routes with an increase on rural and freight lines. These reductions have been brought about through more widespread use of ultrasonic test trains on Primary and Secondary routes, and revisions to standards allowing earlier detection and identification of defects before a speed restriction is required.

Tables 3.6, 3.7 and 3.8 show the lengths of continuous defects remaining excluding Rolling Contact Fatigue (RCF). These are rail defects greater than one yard long made up primarily of untestable rail, lipping, wheelburns and hydrogen shatter cracking. The overall length of continuous defects remaining across the network shows a decrease compared to the previous years due to an increase in defective rail being removed or repaired. Significant increases were seen in the length of continuous defects in Anglia and Kent where greater volumes of defects have been identified. Early detection of these defects, before they are actionable in accordance with the standard will enable longer term and programmed removal plans to be put in place. Western shows a significant reduction in continuous defects due to the larger volumes of removal of older pre 1976 rail over the past year.

Tables 3.9 and 3.10 are also new tables showing the volume of heavy and severe RCF in plain line measured in yards. The introduction and national use of RDMS has enabled the lengths of RCF reported to be split by severity this year. Light and moderate RCF which is managed through cyclic inspection and grinding and requires no additional actions has been omitted and only heavy and severe RCF which requires enhanced inspections and more onerous minimum actions has been reported. The total length of both heavy and severe RCF across the network has shown a slight reduction over the previous year end figures. 2009/10 was the first complete year where RCF data has been

produced directly from RDMS. The previous year's data for 2008/09 was produced using a combination of RDMS and pre-existing procedures for collecting the lengths of rail affected by RCF.

The final two tables 3.11 and 3.12 show the volume of heavy and severe RCF in Switches and Crossings (S&C). This is counted as the number of components within the S&C such as switch rails, stock rails, closure rails and crossings that have a heavy or severe crack within the length of the component. The data shows a slight increase in the number of components affected by heavy RCF and a slight reduction in the number of components affected by severe RCF. This is the first complete year that this data has been sourced directly from RDMS.

Track Geometry – changes to measures in Annual Return 2010

As a result of source, processing and target changes introduced with effect from the beginning of CP4, our reporting requirements have also changed. This year 'good' track geometry has been added to the previous report on 'poor' track geometry (M3), and what was formerly 'Level 2 exceedences' (M5) has now become the more inclusive 'track geometry faults' (M5).

Track geometry quality – Good track geometry (M3)

Definition

The measure Good Track Geometry (GTG) provides a monitor on the proportion of track where the geometry is categorised as 'good' or 'satisfactory' for lateral and vertical alignment. The measure is based on the standard deviations of vertical and lateral alignment for each nominal eighth-mile of track from the output of the track geometry measurement and recording vehicles. The threshold values for the categorisations are specified in Network Rail standards. Values of over 100 per cent are possible as there is a weighting for track categorised as 'good'.

GTG is one of the principal measures in a suite of measures that provide a high level assessment of the track geometry. (Other principal measures are Poor Track Geometry and Geometry Faults per 100 km). All measures need to be considered jointly to fully assess the current condition and trends in track geometry. The majority of track on the network falls into the categories of good or satisfactory track geometry.

Results

The tables below (Tables 3.13 and 3.14) show GTG at 31 March 2010, and for previous years, for each of the nine operating routes in England & Wales, England & Wales as a whole, Scotland and the network total, and for each of the main route classifications and the network total.

In recent years there have been improvements in measurement technology, changes to the way that the data is stored and processed, and changes to the rules for calculating GTG. Results for 2007/08 and 2008/09 have been recalculated to be consistent with current methodologies. Results prior to 2007/08 are not shown in the tables to avoid misleading comparisons.

Table 3.13: Good track geometry (%) by operating route

Operating Routes	*2007/08*	*2008/09*	*2009/10*
London North Eastern	138.8	142.4	142.3
Midland and Continental	130.1	133.2	132.8
London North Western North	131.8	133.5	135.2
London North Western South	143.1	145.4	143.8
Anglia	130.0	131.1	132.5
Kent	127.4	130.0	126.2
Sussex	127.5	130.0	127.6
Wessex	130.3	132.9	133.9
Western	138.8	142.5	142.8
England & Wales	**135.0**	**137.9**	**137.8**
Scotland	**136.5**	**138.2**	**137.4**
Network total	**135.2**	**137.9**	**137.7**
confidence grade	A1	A1	A1

Note: Increasing values indicate improvement. Former London North Eastern became London North Eastern and Midland & Continental during 2008/09, and the new routes calculated back to 31/03/07. Former London North Western became London North Western North and London North Western South during 2009/10, and the new routes also calculated back to 31/03/08.

Table 3.14: Good track geometry (%) by route classification

Route classification	*2007/08*	*2008/09*	*2009/10*
Primary and key London & South East	136.0	138.8	138.0
Secondary, other London & South East and freight trunk	138.3	140.6	140.5
Rural and freight only	120.6	123.1	126.3
Network total	**135.2**	**137.9**	**137.7**
confidence grade	A1	A1	A1

Note: Increasing values indicate improvement.

Reporting Confidence

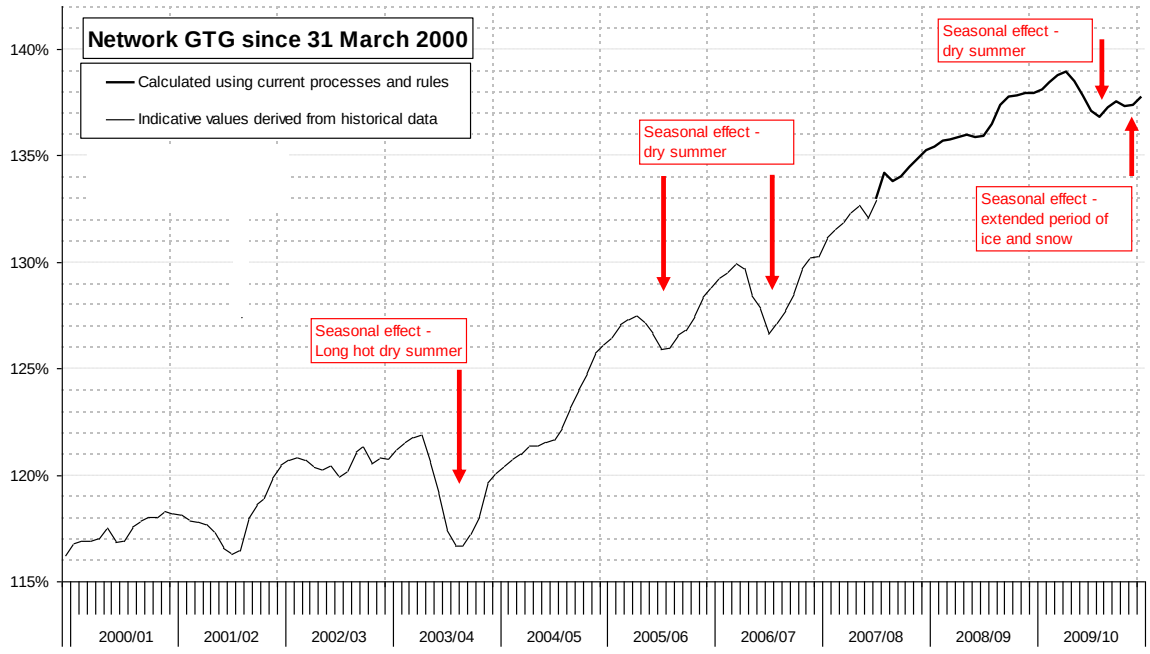
GTG is reported to A1 confidence limits. The track geometry measurement systems that provide the base data, and the data storage and processing systems that are used to calculate GTG, are all well established and maintained.

Commentary

During 2009/10 track geometry has been adversely affected by an unusual combination of weather conditions. This has affected all the track geometry measures, with the pattern across the network being influenced by the weather and geology in the different parts of the country.

At the start of 2009/10 GTG was the best it had ever been, and it improved further over the first 4 periods of the year. In Periods 5 to 8 there was a deterioration in track geometry, caused by ground shrinkage due to low rain fall over the summer. Ground shrinkage regularly occurs during summers with prolonged periods of low rainfall. Significant ground shrinkage was experienced in 2001/02, 2003/04, 2005/06 and in 2006/07. In each of these years remedial actions were carried out during autumn and winter. Full recovery of track geometry to the previous level was achieved by the end of the year in all but 2003/04 (the summer of 2003 was unusually hot and dry for an extended period). These events can be seen in Figure 3.1.

Figure 3.1: Network good track geometry (since 31 March 2000)



In 2009/10, as with previous years, remedial actions to address the problems caused by the ground shrinkage were implemented and there were clear signs of recovery in late autumn. The rate of recovery was similar to that achieved in 2005/06, and full recovery was expected by the end of the year. However, 2009/10 saw the most widespread and prolonged period of severe winter weather for decades. The weather seriously disrupted the remedial work, and also triggered further deterioration, particularly in Scotland where the weather conditions were most severe. Following the return of normal winter conditions there was a slight improvement in the overall figure for GTG across the network, but the final network level result was slightly worse than at the start of the year.

The results by operating route show GTG to be worse at the end of 2009/10 than at the start of the year in five of the ten routes. Kent and Sussex were particularly badly affected. These routes have extensive alluvial clay formations and embankments that are susceptible to shrinkage in drought conditions. They had low rain fall during the summer and heavy snowfalls over the winter. Other routes with clay formations that were affected by the summer shrinkage were Midland & Continental, London North Western South, Anglia, and Wessex. In these routes the proportion of the track affected by summer shrinkage was smaller, and there was less disruption during the severe winter weather. In Anglia and Wessex the maintenance teams managed to restore GTG sufficiently to achieve an improvement over the position at the start of the year.

Track geometry in Scotland was far less affected by the summer, with higher rainfall and a limited extent of drought susceptible soils (mainly peat in highland areas). GTG continued to improve in Scotland over the summer. However, the duration and severity of the winter weather in Scotland had a huge effect on all the track geometry measures, where the data indicates that ground disturbance has occurred from ice formation within the soils. (Whilst ground shrinkage from drought results in cracked and desiccated soils which provide visible evidence of the occurrence, any visible signs of ice formation within soils are hidden, with snow and ice covering the ground during the freezing process and the ice with the soil melting when the ground thaws). The evidence for the cause come from the simultaneous deterioration in all track geometry measures, especially the effect on GTG. The geometry of track categorised as good or satisfactory will tend to deteriorate only slowly unless the support beneath it changes. A sudden deterioration in GTG after a long stable period, together with a simultaneous severe deterioration in PTG, indicates that the track is being affected by a widespread, external influence causing ground disturbance. Scotland experienced these conditions over the winter, and the maintenance teams were unable to recover the track geometry by the end of the year.

At first view GTG by route classification presents an anomalous pattern. The greatest deterioration in GTG between the position at the start and end of 2009/10 occurred on primary routes, with an improvement on rural and freight routes, although the policy places priority on the primary routes. There are two reasons for this pattern. Firstly, the locations that are most susceptible to ground shrinkage are in the south east commuter zones with a high percentage of primary track and a low proportion of rural track. Secondly, the track geometry measurements carried out more frequently on primary routes, and a higher percentage of primary route track is remeasured during each period. Therefore, any deterioration (or improvement) in track geometry on the ground will not be reflected in the statistics until data is returned from the next recording run. When the track is affected by widespread ground shrinkage the impact on GTG and the other track geometry measures is greatest for primary track. Conversely, with remedial resources prioritised at primary routes coupled with the frequency of recording means the rate of recovery is also most evident on primary routes. These trends are present over 2009/10, but were disrupted by the extreme conditions during the winter. For rural and freight routes the trend over the summer and winter does show deterioration and recovery, but to a much smaller degree.

Remedial works to correct the adverse effects of the summer and winter will be carried out over the course of 2010/11 in the affected operating routes. Outside the rectification of the weather related problems, our plan through CP4 is for gradual improvement to GTG. This is in-line with the planned reduction in maintenance cost, and follows five years of substantial improvement.

Track geometry quality – Poor track geometry (M3)

Definition

The measure Poor Track Geometry (PTG) provides a monitor on the proportion of track where the geometry is categorised as 'very poor' for lateral and vertical alignment. The measure is based on the standard deviations of vertical and lateral alignment for each nominal eighth-mile of track from the output of the track geometry measurement and recording vehicles. There is a weighting for extreme values of standard deviation. The threshold values for the categorisations are specified in Network Rail standards.

PTG reflects combinations of aged track with poor track bed condition and undesirable geometrical features such as severely constrained junction layouts and tight and irregular curve radii. Rectification can often only be achieved by significant design alterations, treatment of underlying ground and other environmental conditions, and wholesale renewal. Their location is often in the vicinity of major junctions and switches and crossings. This compounds the scope and complexity of any effective remediation and results in a relatively high cost compared to the overall benefits achieved, especially on rural and freight routes.

Results

The tables below show PTG at 31 March 2010, and for previous years, for each of the nine operating routes in England & Wales, England & Wales as a whole, Scotland and the network total, and for each of the main route classifications and the network total.

In recent years there have been improvements to the measuring technology, changes to the way that the data is stored and processed, and changes to the rules for calculating PTG. Results for 2007/08 and 2008/09 have been recalculated to be consistent with current methodologies. Therefore, results prior to 2007/08 are not shown in Tables 3.15 and 3.16 to avoid misleading comparisons.

Table 3.15: Poor track geometry (%) by operating route

Operating Routes	*2007/08*	*2008/09*	*2009/10*
London North Eastern	2.51	1.86	2.10
Midland and Continental	3.01	2.46	2.47
London North Western North	2.90	2.38	2.37
London North Western South	1.66	1.33	1.40
Anglia	3.90	3.02	3.55
Kent	3.23	2.59	3.57
Sussex	4.14	3.74	4.22
Wessex	3.38	3.05	3.15
Western	2.25	1.85	2.04
England & Wales	**2.75**	**2.23**	**2.45**
Scotland	**2.05**	**1.85**	**1.90**
Network total	**2.66**	**2.18**	**2.38**
confidence grade	A1	A1	A1

Note: Decreasing values indicate improvement.

Table 3.16: Poor track geometry (%) by route classification

Route classification	*2007/08*	*2008/09*	*2009/10*
Primary and key London & South East	2.69	2.19	2.37
Secondary, other London & South East and freight trunk	2.44	2.01	2.31
Rural and freight only	3.23	2.72	2.71
Network total	**2.66**	**2.18**	**2.38**
confidence grade	A1	A1	A1

Note: Decreasing values indicate improvement.

Reporting Confidence

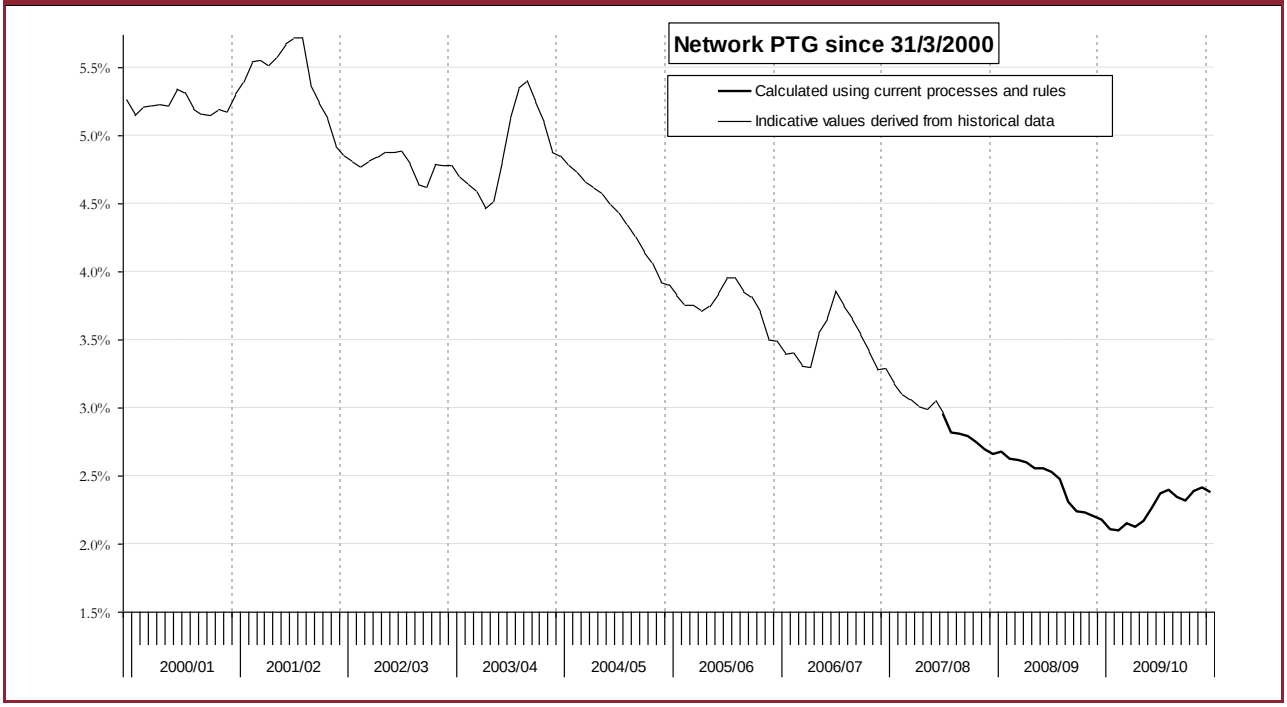
Poor Track Geometry is reported to A1 confidence limits. The track geometry measurement systems that provide the base data, and the data storage and processing systems that are used to calculate PTG, are all well established and maintained.

Commentary

PTG has been affected by both the summer and winter in a similar manner to Good Track Geometry, with the simultaneous severe deterioration in both measures indicating ground disturbance over large portions of the network. As with GTG, at the start of 2009/10 PTG was the best (lowest) that it had ever been after five years of year-on-year improvement. The early periods of 2009/10 saw further slight improvement, until the ground shrinkage in the south east caused a marked increase in PTG. Again there were clear signs of recovery in late autumn, following remedial actions and before the impact of the severe winter weather. The last period of the year showed a slight improvement, but the year-end position was worse than at the start of the year. The trend through 2009/10, and the long term improvements, together with previous occurrences of ground disturbance from drought over the summer can be seen in the following graph. The trend, as shown in Figure 3.2, is virtually a mirror image of GTG.

The results by operating route show PTG to be worse at the end of 2009/10 than at the start of the year in every route except London North Western North. Once again, Kent was particularly badly affected, as was Anglia and Sussex. Results by route classification show the worst deterioration in PTG between the start and end of 2009/10 occurred on secondary routes. As with GTG, PTG on rural and freight routes showed an improvement, but a much smaller one than for GTG. This generally worse annual position for PTG arises from several factors. PTG is calculated from the alignment measurements of the worst sections of track. These are particularly sensitive to external influences, and more difficult to correct than good or satisfactory track. Remedial effort was preferentially targeted at primary routes (which did show improvements after both the summer and winter episodes). Track in secondary and rural routes continued to deteriorate in late winter, influenced by the higher proportions in these classes in Scotland, and the longer time interval between track geometry measurement runs.

Figure 3.2: Network poor track geometry



Condition of asset temporary speed restriction sites (M4)

Definition

This measure provides an assessment of the quality of stewardship of track, structures and earthworks by identifying the number of sites where asset condition has fallen sufficiently below that required for the route speed and traffic type to require the imposition of a temporary speed restriction (TSR) or an emergency speed restriction (ESR). This measure indicates the annual number of sites where an ESR has been imposed for seven days or more, or a TSR has been imposed for any duration due to any degradation in the condition of the asset (track, structure or earthworks). Sites are excluded where an ESR has been imposed for less than seven days due to being part of the normal maintenance cycle. This measure has changed from previous years, when the measure recorded where TSRs had been imposed for four weeks or more.

The annual number of sites is reported by operating route, and individually for track, structures and earthworks. This report separates speed restrictions into 'unplanned' and 'planned' categories. An 'unplanned TSR' also includes an ESR which has been converted to a TSR[1] , a TSR imposed within the 26 week Confirmed Period Possession Plan window, or speed restrictions with no removal plans.

A 'planned TSR' refers to any speed restrictions that the train operators are formally aware of through Rules of the Route (ROTR), the Confirmed Period Possession Plan (CPPP) and the Draft Period Possession Plan (DPPP). This means any speed restrictions imposed as part of the yearly renewals programme, all of which are discussed with train operators as part of ROTR discussions. This also means speed restrictions which have been on for a while and again the train operator is aware (through the formal process above) but has dated plans to remove even if they are in a following year's renewal programme. This explains why some areas have condition speed restrictions shown as planned.

Reporting method

Each TSR or ESR (imposed for seven days or more) is recorded on a weekly basis by operating route, by primary and secondary route, and individually for track, structures and earthworks. These reports form the database for the period-end reporting to ORR, as well as for the M4 Condition of Asset measure.

Results

The following tables (Tables 3.17 to 3.20) show the results for the unplanned and planned speed restrictions across the network.

Table 3.17: National Temporary Speed Restriction Summary – Unplanned and Planned

Network total	***2005/06***	***2006/07***	***2007/08***	***2008/09***	***2009/10***
Unplanned	1040	795	902	761	530
Planned	3837	3599	3648	3675	1561
Grand total	**4,877**	**4,394**	**4,550**	**4,436**	**2,091**

1 If a fault cannot be rectified within a reasonable period the ESR should be converted to a TSR. Timing of the conversion is subject to publication dates of the Weekly Operating Notice (WON) and the changing of the track-side warning signs (from ESRs to TSRs). Sites where ESRs have been imposed are included as part of the Unplanned TSR measures.

Table 3.18: National Unplanned Temporary Speed Restrictions Summary – Total 2009/10							
Operating Routes	***Classification***	***Track***	***GCC***	***Structures***	***Earthworks***	***Safety***	***Total***
Anglia	Primary	44	0	0	2	7	**53**
	Secondary	0	0	0	0	0	**0**
Kent	Primary	22	0	1	1	2	**26**
	Secondary	0	0	0	0	0	**0**
London North East	Primary	43	0	3	0	3	**49**
	Secondary	19	0	0	1	1	**21**
London North West South	Primary	89	0	0	2	4	**95**
	Secondary	14	0	2	2	3	**21**
London North West North	Primary	33	0	2	1	4	**40**
	Secondary	4	0	0	0	4	**8**
Midland & Continental	Primary	22	0	0	0	1	**23**
	Secondary	13	0	1	0	0	**14**
Sussex	Primary	6	0	0	3	1	**10**
	Secondary	0	0	0	0	0	**0**
Wessex	Primary	58	0	3	6	0	**67**
	Secondary	0	0	0	0	0	**0**
Western	Primary	26	0	4	1	0	**31**
	Secondary	7	0	1	2	2	**12**
England & Wales	Primary	343	0	13	16	22	**394**
	Secondary	57	0	4	5	10	**76**
Scotland	Primary	16	0	4	0	0	**20**
	Secondary	27	0	6	0	7	**40**
Network Total	Primary	359	0	17	16	22	**414**
	Secondary	84	0	10	5	17	**116**
Grand Total		**443**	**0**	**27**	**21**	**39**	**530**

Note: GCC: gauge corner cracking

Table 3.19: National Planned Temporary Speed Restrictions Summary – Total Speeds 2009/10						
Operating Routes	***Classification***	***Track***	***Structures***	***Earthworks***	***Safety***	***Total***
Anglia	Primary	59	11	9	8	**87**
	Secondary	0	0	0	0	**0**
Kent	Primary	41	4	1	2	**48**
	Secondary	0	0	0	0	**0**
London North East	Primary	224	2	13	3	**242**
	Secondary	52	4	2	1	**59**
London North West South	Primary	156	14	1	12	**183**
	Secondary	33	2	0	2	**37**
London North West North	Primary	129	2	1	0	**132**
	Secondary	23	2	0	0	**25**
Midland & Continental	Primary	78	0	7	9	**94**
	Secondary	30	2	1	0	**33**
Sussex	Primary	7	1	0	0	**8**
	Secondary	0	0	0	0	**0**
Wessex	Primary	31	2	2	0	**35**
	Secondary	0	0	0	0	**0**
Western	Primary	192	13	1	6	**212**
	Secondary	33	0	1	1	**35**
England & Wales	Primary	917	49	35	40	**1,041**
	Secondary	171	10	4	4	**189**
Scotland	Primary	130	49	0	0	**179**
	Secondary	104	45	2	1	**152**
Network Total	Primary	1,047	98	35	40	**1,220**
	Secondary	275	55	6	5	**341**
Grand Total		**1,322**	**153**	**41**	**45**	**1,561**

Table 3.20: National Temporary Speed Restrictions – Summary 2009/10

Operating Routes	*Classification*	*Unplanned Total*	*Planned Total*	*Grand Total*
Anglia	Primary	53	87	**140**
	Secondary	0	0	**0**
Kent	Primary	26	48	**74**
	Secondary	0	0	**0**
London North Eastern	Primary	49	242	**291**
	Secondary	21	59	**80**
London North Western South	Primary	95	183	**278**
	Secondary	21	37	**58**
London North Western North	Primary	40	132	**172**
	Secondary	8	25	**33**
Midland & Continental	Primary	23	94	**117**
	Secondary	14	33	**47**
Sussex	Primary	10	8	**18**
	Secondary	0	0	**0**
Wessex	Primary	67	35	**102**
	Secondary	0	0	**0**
Western	Primary	31	212	**243**
	Secondary	12	35	**47**
England & Wales	Primary	394	1,041	**1,435**
	Secondary	76	189	**265**
Scotland	Primary	20	179	**199**
	Secondary	40	152	**192**
Network Total	Primary	414	1,220	**1,634**
	Secondary	116	341	**457**
Grand Total		**530**	**1,561**	**2,091**

Figure 3.3: National Unplanned TSRs Actual vs Target

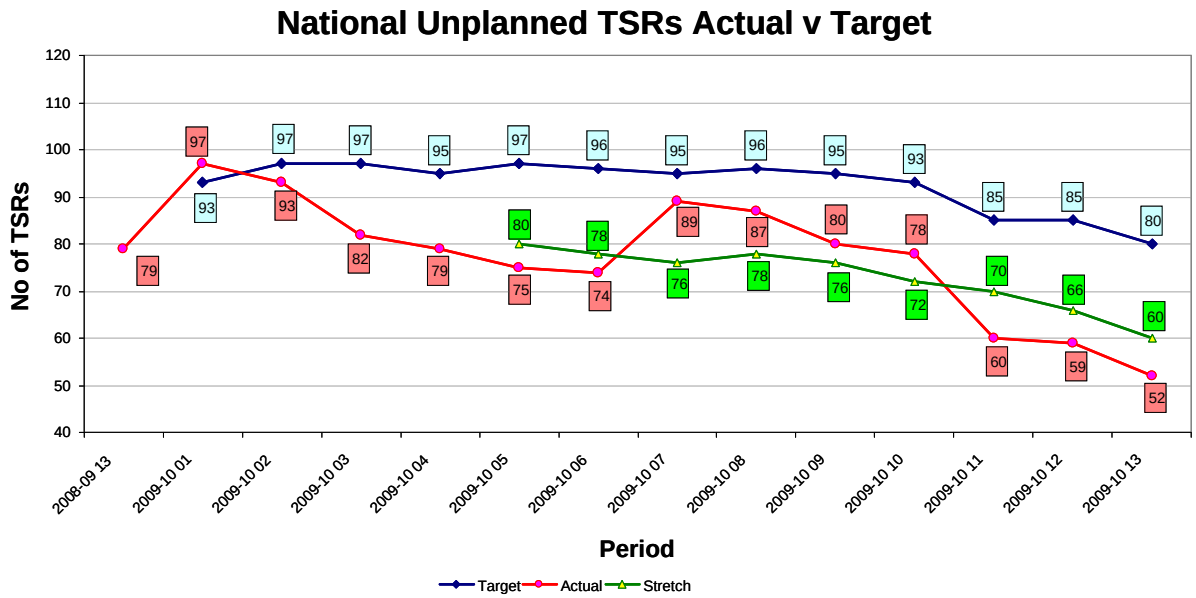


Figure 3.3 shows the actual number of unplanned temporary speed restrictions against monitoring targets and internal stretch targets.

Reporting confidence

Condition of Track – the reporting confidence is at a similar level to the 2008/09 return and a grade of B2 remains appropriate. The method used is very similar to last year, with some improvements in data handling and quality as follows:

- all TSR data is captured in a single information system, the Possession Planning System (PPS), which eliminates any potential for duplication at the boundaries of areas;
- with a single system there is a reduced requirement for human intervention required to compile the reporting information and, therefore, less potential for error; and
- a national list of all TSRs on the network is distributed each week to the Area teams who check to ensure that the list is correct. Further information checks are provided due to the data being published in the Weekly Operating Notice (WON).

Structures and Earthworks – due to the low numbers involved, a close watch can be kept on the TSRs to ensure all changes are recorded accurately. We consider a confidence grade of B2 is appropriate.

Commentary

Track TSRs – Unplanned

The total number of unplanned speed restrictions imposed due to degradation in the condition of the track was 443 in 2009/10. This compares favourably to 617 for 2008/09 and represents a 28 per cent improvement in performance damaging short notice speed restrictions. Highlights are Wessex Route, which recorded a 76 per cent reduction in unplanned track speed restrictions (six in 2009/10 from 26 in 2008/09); London North Western, which recorded a 45 per cent reduction (140 in 2009/10 from 255 in 2008/09) and; London North Eastern with a 37 per cent reduction (62 in 2009/10 from 98 in 2008/09). This reduction has not only been due to the focus placed on removing these unplanned speed restrictions but also by concentrating on TSR risk registers which has benefited by removing the risk of a speed before it was required to be imposed.

Track TSRs – Planned

Renewals and refurbishment work carried out under long term planning is perceived as good stewardship, and therefore speed restrictions arising from such work are shown as planned in this measure. At periods throughout the year Network Rail has been able to report:

- no speed restrictions on the routes radiating out from Paddington to Bristol, Hereford and Penzance, the latter resulting in a 305 mile TSR free railway;
- no unplanned and only four planned speed restrictions on the East Coast Main Line from Kings Cross to Leeds/Edinburgh;
- no unplanned and only four planned speed restrictions on the Midland Main Line from St Pancras to Sheffield; and
- for four periods in 2009/10 the whole of the Sussex route had no unplanned speed restrictions.

Structures and Earthworks TSRs – Unplanned

The total number of unplanned speed restrictions imposed due to degradation in the condition of structures and earthworks was 48 for 2009/10. This compares favourably to 64 for 2008/09 and represents a 25 per cent improvement in performance damaging short notice speed restrictions. Highlights are London North Eastern Route, which recorded a 71 per cent reduction in unplanned track speed restrictions (four in 2009/10 from 14 in 2008/09; Anglia Route, which achieved a 66 per cent reduction (two in 2009/10 from six in 2008/09) and Kent Route, which also achieved a 66 per cent reduction (two in 2009/10 from six in 2008/09).

Structures and Earthworks – Planned

Renewals and refurbishment work carried out under long term planning is seen as good stewardship, and therefore speed restrictions arising from such work are shown as planned in this measure. Key issues to note here is the increased volume of bridgework carried out on the Network in 2009/10. In total 132 planned speed restrictions were imposed in relation to bridge work, 91 of which were in Scotland. This category also includes renewals work on tunnels.

Track geometry faults (M5)

Definition

This measure is based upon the incidence of discrete faults identified against four principal parameters of top (relative vertical position), alignment (relative horizontal position), gauge (the distance between the rails) and twist (relative vertical position across the opposite corners of a three metre bogie or vehicle). These form part of the real-time output from the track recording vehicles to front-line maintenance personnel. The full population of track geometry faults covers a wide range; from serious twist and gauge faults that require an immediate response (block the line or reduce speeds), to relatively minor top and alignment anomalies on low speed track that require only review and monitoring. This measure includes all those faults that require intervention and rectification actions to fixed timescales. Both the trigger values and the specified timescales are mandated in standards. During 2009/10 the standard was changed to give thresholds that varied by linespeed (as was indicated in the Annual Return for 2009).

The measure is normalised as faults per 100 track kilometres to provide comparison across different parts of the network.

Results

The tables below show track geometry faults at 31 March 2010, and for previous years, for each of the nine operating routes in England & Wales, Scotland and the network total: and for each of the main route classifications and the network total.

In recent years there have been improvements to the measuring technology, changes to the way that the data is stored and processed, and changes to the rules for calculating track geometry faults per 100km. Results for 2007/08 and 2008/09 have been recalculated to be consistent with current methodologies. Results prior to 2007/08 are not shown in Tables 3.21 and 3.22 to avoid misleading comparisons.

Table 3.21: Track geometry faults per 100 km by operating routes

Operating Routes	*2007/08*	*2008/09*	*2009/10*
London North Eastern	47.1	39.2	38.9
Midland and Continental	38.7	32.1	33.3
London North Western North	60.5	52.5	46.7
London North Western South	29.6	23.9	24.2
Anglia	53.6	39.0	53.6
Kent	40.0	28.3	39.4
Sussex	52.2	41.7	57.6
Wessex	55.5	46.6	47.4
Western	43.1	37.7	36.8
England & Wales	**47.0**	**38.8**	**40.5**
Scotland	**34.1**	**34.6**	**38.6**
Network total	**45.3**	**38.2**	**40.3**
confidence grade	A1	A1	A1

Note: Decreasing values indicate improvement.

Table 3.22: Track geometry faults per 100 km by route classification

Route classification	*2007/08*	*2008/09*	*2009/10*
Primary and key London & South East	34.0	27.4	29.1
Secondary, other London & South East and freight trunk	46.5	38.3	41.9
Rural and freight only	73.4	69.9	68.0
Network total	**45.3**	**38.2**	**40.3**
confidence grade	A1	A1	A1

Note: Decreasing values indicate improvement.

Reporting confidence

Track Geometry Faults per 100km is reported to A1 confidence limits. The track geometry measurement systems that provide the base data, and the data storage and processing systems that are used to calculate the measure, are all well established and maintained.

Commentary

Track Geometry Faults per 100km has been affected by both the summer and winter in a similar manner to GTG and PTG (see measure M3), with the simultaneous severe deterioration in all measures indicating ground disturbance over large portions of the network. Additionally, as stated above, changes to the Network Rail standards covering actions on track geometry faults were implemented during the year. Threshold values and action requirements for higher risk situations were made more stringent, but they were relaxed for low risk conditions. In introducing these changes comparisons were made with the equivalent thresholds actions applied by other European railways, and the rules applied by Network Rail now align more closely to the emerging European standard. The result that was expected from these changes was an increase in the number of faults requiring immediate action, but fewer faults overall. The change was introduced in December 2009. The effects of the standard change can be seen in the underlying data, with increases in those types of fault where the standard was tightened, and decreases where the standard was relaxed. However, with the implementation of the new standards coinciding with the severe winter weather, the analysis of faults and causes is complex. At this stage no overall decrease in faults is apparent as a result of the standards change.

As with GTG and PTG, at the start of 2009/10 Track Geometry Faults per 100km was the best (lowest) that it had ever been after nine years of year-on-year improvement. The early periods of 2009/10 saw further slight improvement, until the ground shrinkage in the south east caused a marked increase in faults. The problems caused by the summer persisted into autumn, particularly with top and twist faults (a frequent result of ground shrinkage). Some locations were showing signs of halting the deterioration, but at the time the severe winter weather arrived there were no overall improvements and new measurements on secondary and rural routes with longer intervals between recording runs were expected to detect further faults. The snow and ice disrupted all maintenance activity in many parts of the country, and triggered a major deterioration of track geometry in Scotland, affecting all the track geometry measures. Remedial work was prioritised to primary routes and the number of faults per 100km was reduced on track in this route classification, but there was little change in the overall number of faults in the last three periods of the year.

The overall result is that track geometry faults per 100km have deteriorated during 2009/10, with seven of the ten operating routes returning a worse result than in 2008/09. Kent, Sussex and Anglia experienced the greatest deterioration, and London North Western North the best improvement. Results by route classification show the worst deterioration to have occurred on secondary routes, with an improvement on rural and freight routes for the reasons explained in the section on GTG. The plan through CP4 is for a steady reduction in the number of track geometry faults.

Earthwork failures (M6)

Definition

This measure reports the annual number of embankment or cutting failures and separately identifies the number of failures causing a passenger or freight train derailment on running lines.

In addition the Soil Slope Hazard Index (SSHI) and Rock Slope Hazard Index (RSHI) are now recorded as part of the Earthwork condition measure. The earthworks condition measures are reported by three categories (poor, marginal, and serviceable) to reflect the frequency of examinations. However, the reporting of SSHI and RSHI will be developed in 2010 for the reporting of 2010/11 data in next years report.

Reporting method

All known failures have been reported by the Route Geotechnical Teams following occurrence and throughout the year. This involves details of incidents, which fall under the above definition, to be captured from Hazard Reports and in the Daily National Incident Log. These are checked with the Territory Civil Engineers at the year end for their agreement and for discrepancies to be addressed.

The SSHI and RSHI measures are assessed as part of the following activities:

- cyclical examinations;
- special examinations;
- evaluations; and
- the maintenance of records, including the updating of the asset register(s).

Results

The following table (3.24) shows the number of sites of earthworks failures for each of the operating routes, England and Wales, and Scotland, and for the whole network.

Table 3.23: Earthwork condition measures

Condition rating	*SSHI score*	*RSHI score*	*Planned interval (years)*	*Permitted tolerance in interval (months)*
Poor	≥10	≥100	1	4
Marginal	6 to 10	10 to 100	5	6
Serviceable	≤6	≤10	10	12

Table 3.24: Earthworks failures by operating route

Operating Routes	*2005/06*	*2006/07*	*2007/08*	*2008/9*	*2009/10*
London North Eastern	7	8	27	7	4
Midland and Continental	1	3	1	1	0
London North Western North	3	4	12	8	9
London North Western South	0	1	8	1	1
Anglia	2	6	2	0	2
Kent	1	5	0	6	4
Sussex	0	10	2	2	5
Wessex	2	5	5	7	2
Western	18	37	42	15	18
England & Wales	**34**	**79**	**99**	**47**	**45**
Scotland	**7**	**11**	**8**	**14**	**12**
Network Total	**41**	**90**	**107**	**61**	**57**

Reporting confidence

The number of failures and derailments is supported by territory data. Given that the hazard reporting system that generated the data has been running since August 2003, we believe that a rating of A2 is appropriate both for the operational route split and for the total.

Commentary

There was one derailment of a passenger train on 28 November 2009 at Gillingham (Dorset) as a result of a cutting slip. This was caused by crest drainage being overwhelmed by very high local rainfall. There is a slight downward trend in the number of failures which occurred over the last 3 years but the internal target of 47 for this year was not attained. This is largely due to the extreme weather conditions experienced through the winter of 2009/10 and the M6 measure will be best assessed as an average over the control period. The number of failures reported has been reviewed and validated by the Principal Civil Engineer (Geotechnical) and the Route Geotechnical Engineers. The Principal Civil Engineer has provided guidance throughout the year on when incidents become reportable under this measure. This is consistent with the approach in previous years. To ensure the scope of reportable incidents are fully understood by the Route teams a refresher brief has been arranged for 2010/11. We will also be developing and trialling a new report for an Earthworks Condition Measure in 2010/11 which we intend to implement in 2011/12. This will be an additional measure which will measure asset condition.

Tunnel condition

Definition

During the year a new objective system to score tunnel conditions was launched nationally. This score is generated automatically by the routine detailed, standardised examination report, and the system is termed Tunnel Condition Marking Index (TCMI). All Network Rail managed tunnels that have brickwork or masonry linings are included in this system. Unlined tunnel sections are not included in the system.

Reporting Method

Each time a detailed examination of a tunnel is carried out, the standard defect coding within the report representing severity and the extent of all salient defects, generates a condition score for the tunnel. The scores range from 100 for the best condition descending to zero for the worst condition. TCMI scores are derived for the major tunnel components of bores and portals separately and are, therefore, reported as such. It should be noted that some tunnels have more than one bore.

Tunnel bores are divided into 20 metre section lengths for reporting purposes, the tunnel bore TCMI score is an average of these section scores for each tunnel. Since tunnels are long linear assets, the worst section scores within a bore are also reported to remove the dilution of these scores by the average figure.

Tunnel shaft examinations do not currently generate TCMI scores. However, it is intended to develop a shaft TCMI during 2010/11 for roll out in 2011/12. Ancillary tunnel components, such as cross passages between bores, will not receive TCMI scoring as part of this new measure.

Results

Table 3.25: Tunnel Condition Marking Index Score Summary to April 2010

Territory	*No. of bore scores out of total bores*	*Average bore Score*	*Lowest section score*	*No. of portal scores out of total portals*	*Average Portal Score*
London North Eastern	44 out of 146	87	4	22 out of 284	89.5
London North Western	55 out of 292	88	3	51 out of 465	84.5
South East	39 out of 130	83	35	46 out of 256	98
Western	10 out of 95	91	22	6 out of 187	90.5
Scotland	28 out of 80	94	11	46 out of 159	96.5
Network Average		**88.6**			**92**

Reporting confidence

The TCMI scoring system has been developed to incorporate all salient tunnel lining defect types that contribute to overall condition. Engineering principles and judgment has been used to generate an algorithm with appropriate defect weightings to produce a score that reflects the condition of the tunnel. Since this is the roll out year for TCMI, it is intended to undertake an evaluation of the scores in relation to engineering perception of the tunnel conditions once larger data sets have been achieved. Recalibration of the algorithm will be undertaken if required. With this in mind the confidence grade for this measure is a B2.

Commentary

The detailed tunnel examination reports that generate TCMI were implemented in September 2009 with delivery to Network Rail commencing in the October 2009 period. Prior to the TCMI implementation date, tunnels were examined in the old examination format which did not produce the objective condition score. This explains the percentage of TCMI scores out of the possible maximum. The numbers of bore and portal scores stated are those obtained to the end of April 2010. It is worthy of note that when considering the number of scores obtained out of the total number of relevant components (e.g. number of bore scores out of a total number of bores) that the detailed examinations are of varied frequency of between one and two years for bores and in some cases one and six years for portals. It is not, therefore, planned to conduct detailed examinations (and therefore obtain TCMI scores) for the total number of those components in any one year. The network average bore score is the average of the bore scores per territory.

To overcome the effect of dilution of a section score the lowest section score is included in the data. As an example, a tunnel bore of three mile length containing around 264 sections may have a small number of very poor sections within but also have many very good sections, so the overall score should be indicated appropriately as good; however the small number of poor sections that could affect operability within the tunnel should not be overlooked. The network average portal score is the average of the portal scores per territory.

Bridge condition (M8)

Definition

The bridge condition grade is a measure from one to five, with one representing good condition and five poor condition. Each bridge is graded from a structures condition marking index (SCMI) value determined using the scoring tool set out in the SCMI handbook. The SCMI process is a marking methodology that grades the condition of each bridge on a 1–100 scale and involves defining the elements of the bridge and determining the extent and severity of defects in each of the elements. The bridge scores are collated into five bands, as in the following table (Table 3.26).

Reporting method

The reported measure is presented as a distribution graph (see Figure 3.4) showing the cumulative number of bridges assessed since 2000 on a 1–100 scale. Additionally, bridge mark data is collated into each of the five condition grades, and numbers of bridges reported by band. The dates relate to the period the examination was carried out. SCMI is not normally carried out on major structures, footbridges and tenanted arches.

Table 3.26: Structures Condition Marking Index (SCMI)

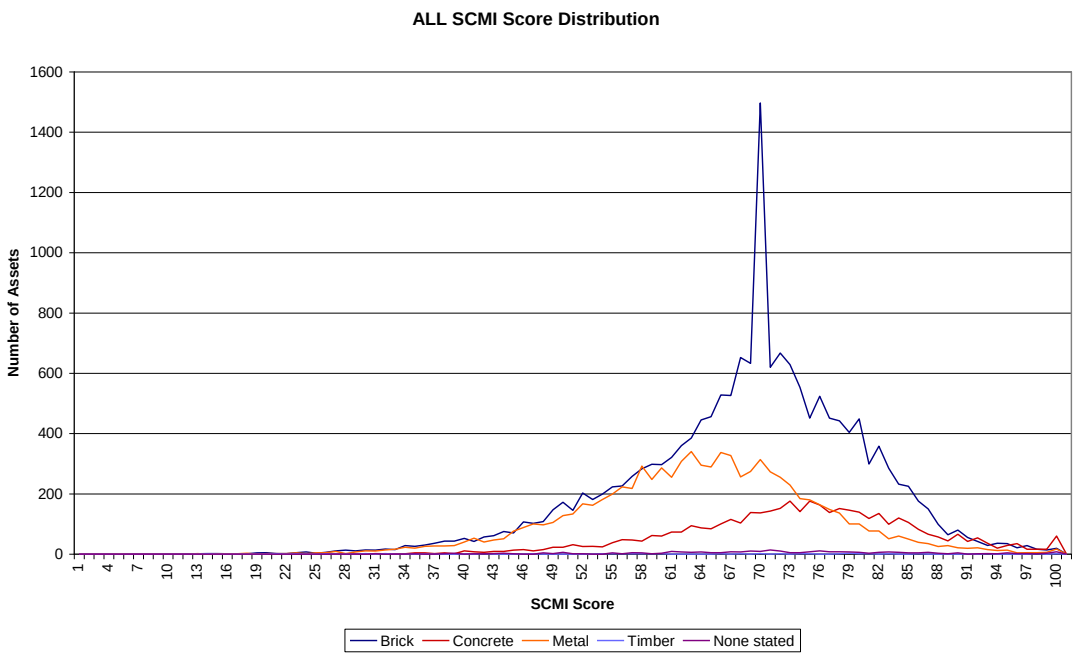
Condition bands	*Condition score (the higher the core the better)*
1	100–80
2	79–60
3	59–40
4	39–20
5	19–1

Results

Table 3.27: Bridge condition index

Bridge Condition Grade	*Equivalent SCMI Value*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*
1	80–100	728	660	711	862	500
2	60–79	3,033	2,720	2,577	3,145	2,036
3	40–59	1250	966	914	1060	598
4	20–39	107	108	85	111	70
5	1–19	4	6	2	5	2
Total no. examined		**5,122**	**4,460**	**4,289**	**5,183**	**3,206**
Average condition grade		**2.14**	**2.12**	**2.09**	**2.08**	**2.08**

Figure 3.4: SCMI score distribution – 30,068 structures



Baseline

Since the last report the results have been related to a new baseline. Previously the Annual Return figures related to the existing results in the SCMI database for any year. We have now generated a new report that uses the date of the examination as the reporting baseline. This has been requested for several years but required an IT application upgrade. The results are generally unaffected by this amendment. However, one effect of this means that any lag in getting results into the database may affect the year's figures. The SCMI database is not integrated with other systems and requires manual updates which can cause problems with uploading data. Where a second phase result is available, this is used for the M8 measure. The database contains approximately 30,000 bridge assets. It should be noted that these do not entirely align with the CARRS asset register as changes to the CARRS database cannot be applied retrospectively to the SCMI database.

The peak at a SCMI score of 70 has been investigated and it represents a high number of masonry arch structures with brick face spalling and loss of pointing. There appears to be a small anomaly in the scoring system that gives a disproportionate number of structures a score of 70. However, as this is in the middle of a band, this does not affect the overall pattern of results. The distribution of the different materials indicates that metallic structures have the lowest condition but it should be noted that a different scoring matrix is used for severity and extent.

Uses of SCMI outputs

SCMI was originally introduced to promote an objective examination process and reduce the subjectivity that previously existed with the good/fair/poor reporting system. It was aimed at the component level so deterioration of a particular element could be ascertained and managed. The global score is generated from an algorithm and is used as an overall measure. The global score is considered useful when applied to a population of assets.

SCMI is now being used for several management processes. On an individual asset it is used as part of a risk assessment to set detailed examination frequencies and the component scores highlight areas of concern that can be addressed in the examination report and subsequent actions. The SCMI database has also been extensively used to identify structures with particular generic features. This allows us to manage risk on a network-wide basis.

Reporting confidence

The confidence grades allocated for this measure are B3 for numbers of bridges in each condition grade (1–5), and B3 for the average condition grade for the inspected bridges stock. The classification of 'C' related to the need to extrapolate the measure during the time it took to capture a complete first generation of scores. We have now completed this and, therefore, the scores have improved to 'B'. However, it is still recommended that further reviews consider the difference that applies to an individual structure and the total population.

Second phase reports

There have been 5,330 second phase examinations with SCMI scores. These results are in the initial stages of validation and analysis. The results appear to indicate an approximate deterioration rate in the order of one point per annum per asset. The effect and/or correlation between intervention and maintenance requires further analysis. The proportion of second phase results are shown in Figure 3.5, below.

Update on current processes

SCMI data continues to be transferred directly to the territories on discs and each territory uploads data into the SCMI data base which is hosed on a Citrix server. Currently there is no interface between CARRS and the SCMI server. The new examination contractor has a new IT system and it is developing interfaces with SCMI and CARRS. However, there have been some IT problems and the effect has impacted in the transfer of SCMI data.

Risk based examination intervals have been introduced for bridges. This optimises the level of examination with the risk of the bridge. Two key factors in the determination of risk are the SCMI score and the assessed capacity of the bridge. In general terms, visual examinations continue to be carried out annually and the interval for detailed examinations can vary between three and 18 years. The option to adopt a bespoke examination regime for any structure remains. As SCMI benchmarking is an intrinsic part of the detailed examination the intervals for SCMI will vary in the future.

Figure 3.5: SCMI score distribution – 2nd Phase vs Total

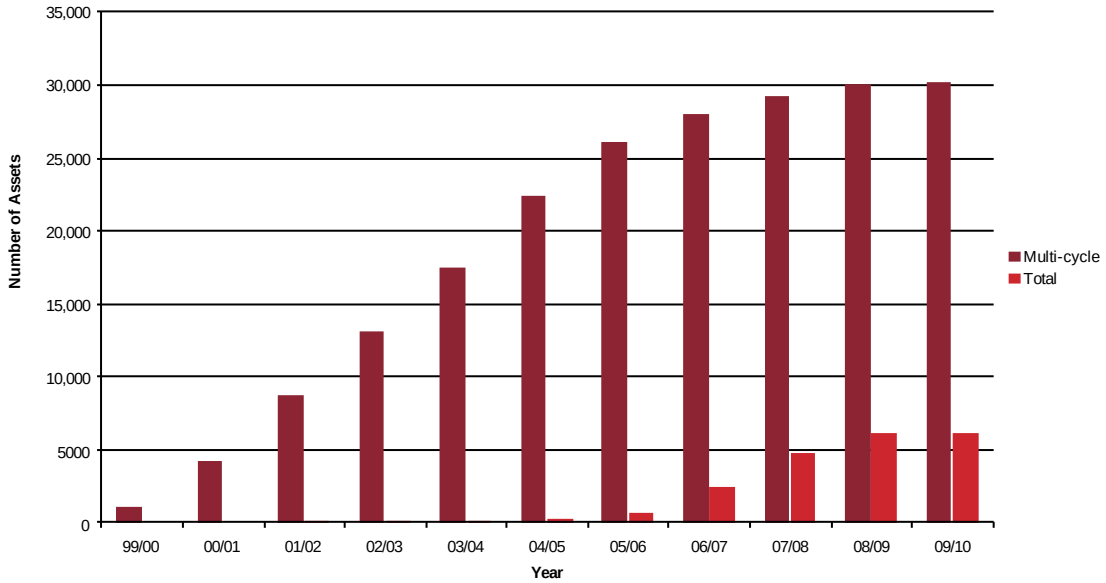
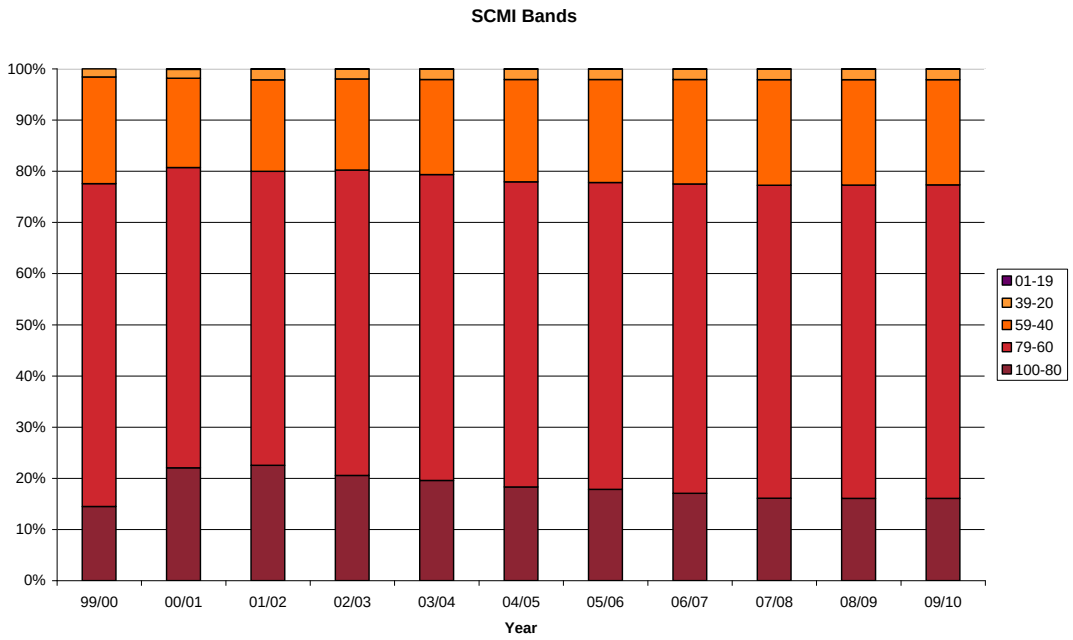


Figure 3.6: SCMI score distribution – trends



Commentary

There are some perceptible trends emerging from the results, shown in Figure 3.6, which represents the percentage share of the bands.

The data is cumulative and therefore represents an increasing volume but the results show an increasing population in Band 4 and a respective decrease in Band 1. This is indicative of a worsening in overall condition. We have also looked at different materials and there are slightly different distributions, with metallic structures generally scoring lower than masonry. The average condition index calculated on this years SCMI inputs has remained virtually static at a value of 2.1. The new baseline has had little effect on the output although the global outputs are beginning to show some trends. However, more analysis is required before firm conclusions are made.

Signalling failures (M9)

Definition

This measure reports the total number of signalling failures causing a cumulative total train delay of more than 10 minutes per incident, and only includes failures on Network Rail owned infrastructure.

Reporting Method

The data was compiled from the TRUST system (Train Running System) and shows the number of signalling failures where train delays in excess of 10 minutes have been recorded. This data was merged with the reported train mileage then allocated to the business operating routes.

Reporting confidence

Train running information is reported in TRUST. All signalling failures are also reported in FMS (Fault management System) and are allocated to delivery units (routes). FMS is used to manage failures and produce data on the reasons for equipment failure. The reported values allow for any minor errors in attribution of data between routes within the overall value given. The confidence grade for this measure is B2.

Commentary

We continue to target improvements to train running performance, and statistics published elsewhere show higher train punctuality levels than the company has achieved at any time since privatisation. Part of this improvement is due to the reduction in signalling failures causing more than 10 minutes delay. Results from TRUST show a 6.7 per cent improvement (18,301 for 2009/10 compared with 19,622 for 2008/09). At the same time, the normalised figure of “failures per million train km” has improved from 39 to 34, as the number of trains running on the network continues to increase. The introduction of the process led organisation has seen the creation of a new team headed by the director of maintenance reliability with a mandate to review and implement a programme of targeted initiatives designed to drive the sustainable improvements to the reliability of signalling and other assets. The establishment of reliability improvement groups and national, Route and Delivery Unit level have driven consistent improvements at all levels of the organisation resulting in the overall improvement in 2009/10 despite the impact of severe weather experienced in Period 10. Looking forward, 2010/11 will see the phased introduction of the Intelligent Infrastructure Project which further increases our ability to improve the reliability of signalling assets through pro-active real-time monitoring.

Results

Table 3.28: Number of signalling failures

Operating Routes	*2007/08 no.*	*No. per million train km*	*2008/09 no.*	*No. per million train km*	*2009/10 no.*	*No. per million train km*	*CG*
London North Eastern	3,066	41[1]	3,023	36	2,873	33	
Midlands and Continental	902		696	27	702	23	
London North Western North	2,729	54[2]	2,730	55[2]	2,481	39[2]	
London North Western South	3,078		3,476		2,760		
Anglia	1,506	36	1,358	29	1,617	32	
Kent	1,014	32	1,124	33	1,169	33	
Sussex	858	30	947	30	812	24	
Wessex	1,611	36	1,271	28	1,154	24	
Western	2,953	46	2,897	42	2,736	38	
England & Wales	**17,717**	**43**	**17,522**	**39**	**16,304**	**33**	**B2**
Scotland	**2,183**	**50**	**2,100**	**43**	**1,997**	**38**	**B2**
Network total	**19,900**	**43**	**19,622**	**39**	**18,301**	**34**	**B2**

Notes:

1. Combined figure for London North Eastern and Midland and Continental
2. Combined figure for London North Western

Signalling asset condition (M10)

Definition

The purpose of this measure is to assess the condition of signalling assets in terms of a 1–5 grading system, where a condition grade of one is good and five is poor. Condition grade is based on residual life of the equipment in a signalling interlocking area using the signalling infrastructure condition assessment (SICA) tool. While the assessment is dominated by the condition of the interlocking, the condition of lineside signalling equipment is also taken into account.

Reporting method

This Annual Return has been collated from SICA assessment records stored in the Signalling Schemes Asset Data System (SSADS) which is the Network Rail repository for all SICA assessments. This tool stores information from all SICA records in a central repository. This allows improved visibility of the results from SICA surveys, produces up to date SICA assessment schedules for use by our Routes and has multiple reporting functions of which the Annual Return is just one.

The total population of interlockings on Network Rail infrastructure is 1,660. Of these, 34 have been renewed in the last five years and as such do not require a current SICA assessment. This leaves a balance of 1,626 interlockings requiring a valid SICA assessment which is reflected in Tables 3.29 and 3.30 and as such shows that Network Rail has 100 per cent SICA coverage in compliance with the standard.

The total population of signalled level crossings requiring a SICA assessment on Network Rail infrastructure is 1,599. Of these, 19 have been renewed in the last five years and as such do not require a current SICA assessment. This leaves a balance of 1,580 level crossings requiring a valid SICA assessment which is reflected in Table 3.31 and demonstrates that we have 100 per cent SICA coverage in compliance with the standard.

Results

Table 3.29: Total number of interlocking areas with a SICA assessment at end of each financial year

Condition grade	*Observed nominal residual life (in years)*	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*	*CG*
1	>20	8	3	5	9	22	
2	10 to 20	1,024	965	1,022	1,030	1115	
3	3 to 10	530	520	518	546	463	
4	<3	51	20	15	24	18	
5	At end of life	0	14	15	13	8	
Average condition grade		**2.39**	**2.39**	**2.38**	**2.39**	**2.31**	
Total number assessed		**1,613**	**1,522**	**1,575**	**1,622**	**1,626**	**B3**

Table 3.30: Signalling condition index by operating route

Operating routes / condition grade	*1*	*2*	*3*	*4*	*5*	*Total 2008/09*	*CG*	*1*	*2*	*3*	*4*	*5*	*Total 2009/10*	*CG*
London North Eastern[1]	6	273	137	10	4	430		19	284	111	8	3	425	
London North Western[2]	2	263	111	6	2	384		2	285	94	3	2	386	
Anglia	1	97	28	3	3	132		1	109	22	1	0	133	
Kent	0	51	30	2	2	85		0	58	27	2	1	88	
Sussex	0	39	21	0	0	60		0	39	16	0	0	55	
Wessex	0	48	33	0	2	83		0	58	24	0	2	84	
Western	0	143	136	1	0	280		0	145	137	3	0	285	
England & Wales	**9**	**914**	**496**	**22**	**13**	**1,454**		**22**	**978**	**431**	**17**	**8**	**1,456**	
Scotland	**0**	**116**	**50**	**2**	**0**	**168**		**0**	**137**	**32**	**1**	**0**	**170**	
Network Total	**9**	**1,030**	**546**	**24**	**13**	**1,622**	**B3**	**22**	**1115**	**463**	**18**	**8**	**1,626**	**B3**

Notes:

1. Includes Midland & Continental Route
2. North and South is combined

Table 3.31: Level Crossing condition index by operating route 2009/10 year total

Operating route	*Total LX Population*	*Total LX Surveyed*	*Condition grade*				
			1	*2*	*3*	*4*	*5*
London North Eastern	638	636	49	543	43	1	0
London North Western	158	156	6	101	46	3	0
Anglia	256	247	8	198	40	1	0
Kent	61	61	0	47	13	1	0
Sussex	66	66	0	58	8	0	0
Wessex	99	99	0	79	18	2	0
Western	216	215	0	123	87	5	0
England & Wales	**1,494**	**1,480**	**63**	**1,149**	**255**	**13**	**0**
Scotland	**105**	**100**	**0**	**61**	**39**	**0**	**0**
Network Total	**1,599**	**1,580**	**63**	**1,210**	**294**	**13**	**0**

Reporting confidence

Reporting confidence is stated as B3. The nature of the SICA tool means that an accuracy band better than 3 cannot be realistically achieved. A reliability band of B is given as, although there is no extrapolation of the data, there are still a number of older SICA assessments carried out to an earlier version and a small number of interlockings did not have assessments at the end of the reporting period.

Commentary

The SICA process remains, and will continue to remain, our prime tool for assessing the condition of signalling assets. The results of the SICA surveys from both interlockings and level crossings are used to develop a renewals work bank for signalling assets. Looking forward over the next 40 years, this allows a detailed proposal to be developed as part of our plans for CP4 and beyond. The improvement is due to more and targeted investment in renewals over the last few years from the levels in the early part of CP3 to a more steady state for the last couple of years. As it takes sometime for SICA assessments to be updated, the standard allows five years from renewal, we are now only just beginning to see the impact of this increased investment with more new assets out on the ground than before and thus an increase in the average condition.

Alternating current traction power incidents causing train delays (M11)

Definition

This measure reports the number of overhead line equipment (OLE) component related failures that lead to incidents of duration exceeding 500 train delay minutes. Incidents due to bird strikes and vegetation incursion are included but those proved to have been caused by defective train operating company (TOC) equipment, outside parties, vandalism and those arising as a direct result of extreme weather conditions are excluded.

Reporting method

This involves the Asset Reporting Manager (ARM) monitoring failures reported in the Daily National Incident Report and at each period end the summary is sent to the mechanical and electrical (M&E) Maintenance Support Engineers for their review and verification. It is they who investigate the cause of each traction power incident, and the verified figures are provided to the ARM.

Reporting confidence

Overall the confidence level is considered to be B2.

Commentary

The 2009/10 network total of 46 incidents is significantly less than 2008/09, and previous years. Three routes have remained static and the main changes have been on the two London North Western (LNW) routes and on London North Eastern (LNE). The construction work on LNW finished during the year 2009/10 and there was no repeat of the previous year's problems with the recently installed neutral sections. The main causes of incidents on LNE were related to weakness within the design of the overhead line equipment (OLE) system. On the Anglia route, the construction work associated with the renewal of 1940s vintage OLE between Liverpool Street and Chelmsford has progressed during the year but it has not achieved the volume of renewal that was originally planned. Another factor influencing these results was that the Unimog 400 OLE maintenance vehicles, which are used on London North Eastern, Scotland, and Anglia routes, were reintroduced during the year, following safety modification work.

Results

Table 3.32: Electrification failures: overhead line

Operating routes	*2006/07*	*2007/08*	*2008/09*	*2009/10*	*CG*
London North Eastern	14	19	15	9	B2
Midland & Continental	2	2	4	4	B2
London North Western North	9	6	7	2	B2
London North Western South	21	21	23	15	B2
Anglia	18	10	13	13	B2
Kent	0	0	0	0	B2
Sussex	0	0	0	0	B2
Wessex	0	0	0	0	B2
Western	0	0	2	0	B2
England & Wales	**64**	**58**	**64**	**43**	**B2**
Scotland	**5**	**5**	**2**	**3**	**B2**
Network total	**69**	**63**	**66**	**46**	**B2**

Direct current traction power incidents causing train delays (M12)

Definition

This measure reports the number of conductor rail component related failures that lead to incidents of duration exceeding 500 train delay minutes. It excludes incidents proved to have been caused by defective TOC equipment, outside parties, vandalism, animals and those arising as a direct result of extreme weather conditions.

Reporting method

This involves the Asset Reporting Manager (ARM) monitoring failures reported in the Daily National Incident Report and at each period end the summary is sent to the M&E Maintenance Support Engineers for their review and verification. It is they who investigate the cause of each traction power incident, and the verified figures are provided to the ARM for collation.

Reporting confidence

Overall the confidence level is considered to be BX (it should also be noted that the size of the data set is very small).

Commentary

The 2009/10 network total of 14 is the same as the previous year and the numbers of incidents on each route is not significantly different from the previous year. The volume of new trains and the greater level of trains running has increased the electrical demand on the equipment and is a factor that has influenced these results.

Results

Table 3.33: Electrification failures: conductor rail

Operating routes	*2006/07*	*2007/08*	*2008/09*	*2009/10*	*CG*
London North Eastern	0	0	0	0	
Midland & Continental	0	0	0	0	
London North Western North	0	0	0	0	
London North Western South	1	0	0	1	
Anglia	0	0	0	0	
Kent	2	0	2	2	
Sussex	1	5	8	6	
Wessex	7	4	4	5	
Western	0	0	0	0	
England & Wales	**11**	**9**	**14**	**14**	**BX**
Scotland	**0**	**0**	**0**	**0**	**BX**
Network total	**11**	**9**	**14**	**14**	**BX**

Electrification condition – AC traction feeder stations and track sectioning points (M13)

Definition

This is a measure of the condition of alternating current traction feeder stations and track sectioning points, on a scale of 1–5, based on visual inspection and the age, robustness of design, maintenance/refurbishment history and operational performance of the 25kV switchgear:

- Band 1: equipment is free from defects with negligible deterioration in condition;
- Band 2: evidence of minor defects and/or early stage deterioration that may require some remedial work to be undertaken;
- Band 3: defects and/or a level of deterioration that requires remedial work to be undertaken;
- Band 4: significant defects and/or a high level of equipment deterioration needing major repairs/heavy maintenance or complete renewal to be programmed; and
- Band 5: serious defects and deterioration of a level that, should the equipment still be in operation, has potential for service disruption.

The measure reports the percentage of feeder stations and track sectioning points falling within each of the defined condition grades.

Reporting method

The national report has been produced in accordance with a new Network Rail Standard NR/L3/ELP/27240 NR/DIST C19a, which was published in September 2009. The condition assessments are done through a combination of visual inspections and measurements at 25kV switchgear at feeder stations and traction sectioning points. The condition assessment grade is a result of weighted pre-determined questions that consider the robustness of the installation, fitness for purpose and maintainability. The measure takes advantage of having maintenance in-house and developments in technology allowing an element of non-intrusive measurements and, therefore, reducing the subjectivity within the assessment. The age and life expectancy of the equipment is also incorporated into the scoring system for the first time.

Reporting confidence

The reporting confidence is BX as only 18 per cent of the locations have been inspected using the new measure.

Commentary

This measure includes a total of 293 locations of which 53 (18 per cent) were assessed by inspection. All locations are due to be assessed over a five year period.

Results

Table 3.34: Electrification condition – AC traction 2009/10 year total

Condition grade	*Network*	*South East*	*London North Eastern*	*London North Western*	*Scotland*
1	15%	22%	18%	13%	8%
2	24%	19%	50%	3%	45%
3	37%	45%	32%	33%	31%
4	22%	14%	0%	45%	16%
5	2%	0%	0%	6%	0%
Average condition grade	2.70	2.59	2.21	3.29	2.60

Electrification condition – DC traction substations (M14)

Definition

This is a measure of the condition of direct current traction substations including track paralleling locations on a scale of 1–5, based on visual inspection and the age, robustness of design, maintenance/refurbishment history and operational performance of the equipment:

- Band 1: equipment is free from defects with negligible deterioration in condition;
- Band 2: evidence of minor defects and/or early stage deterioration that may require some remedial work to be undertaken;
- Band 3: defects and/or a level of deterioration that requires remedial work to be undertaken;
- Band 4: significant defects and/or a high level of equipment deterioration needing major repairs/heavy maintenance or complete renewal to be programmed; and
- Band 5: serious defects and deterioration of a level that, should the equipment still be in operation, has potential for service disruption.

The measure reports the percentage of HV & DC substations falling within each of the defined condition grades.

Reporting method

The national report has been produced in accordance with a new Network Rail Standard NR/L3/ELP/27240 NR/DIST C19a which was published in September 2009. The condition assessments are done through a combination of visual inspections and measurements at 25kV switchgear at feeder stations and traction sectioning points. The condition assessment grade is a result of weighted pre-determined questions that consider the robustness of the installation, fitness for purpose and maintainability. The measure takes advantage of having maintenance in-house and developments in technology allowing an element of non-intrusive measurements and therefore reducing the subjectivity within the assessment. The age and life expectancy of the equipment is also incorporated into the scoring system for the first time.

Reporting confidence

The reporting confidence is BX as only 7 per cent of the assets have been assessed under the new measure.

Commentary

This measure includes a total of 676 locations of which 49 (7 per cent) were assessed by inspection. All locations are due to be assessed over a five year period.

Results

Table 3.35: Electrification condition – DC traction substation 2009/10 year total

Condition grade	*Network*	*South East*	*London North Eastern*	*London North Western*	*Scotland*
1	16%	16%	50%	6%	N/A
2	45%	46%	17%	50%	N/A
3	33%	29%	33%	44%	N/A
4	6%	9%	0%	0%	N/A
5	0%	0%	0%	0%	N/A
Average condition grade	2.32	2.34	2.12	2.41	N/A

Note: The trial was conducted on London North Western assets so no reports are available for other locations this year (see commentary).

Electrification condition – AC traction contact systems (M15)

Definition

This is a measure of the condition of AC contact systems, on a scale of 1–5, based on physical wear measurement of contact wire and visual inspection of key components including contact and catenary wires, registration assemblies and structures. A condition grade of one is good and five is poor. This measure excludes all earthing, bonding and traction return circuits.

Reporting method

This is in accordance with the company's Asset Reporting Manual procedures.

Reporting confidence

This measure is given a B4 confidence grade.

Commentary

The ten year condition score of 1.6 has remained the same as last year and is particularly driven by the large volume of assets that were inspected in 2009/10 on the London North Eastern route with grades 1 and 2.

Results

Table 3.36: Electrification condition – AC traction contact system

Condition grade	*2000/06 6-yr total contact wire/key components*	*2000/07 7-yr total contact wire/key components*	*2000/08 8-yr total contact wire/key components*	*2000/09 9-yr total contact wire/key components*	*2000/10 10-yr total contact wire/key components*	*CG*
1	38%	38%	42%	43%	57%	
2	54%	54%	51%	50%	40%	
3	7%	7%	7%	7%	3%	
4	0%	0%	0%	0%	0%	
5	0%	0%	0%	0%	0%	
Average condition grade	**1.7**	**1.7**	**1.7**	**1.6**	**1.6%**	**B4**
Percentage of assets surveyed	**21%**	**27%**	**30%**	**33%**	**54%**	

Table 3.37: Electrification condition − AC traction contact system 2009/10 year total

Condition grade	*London North Eastern*	*London North Western*	*Scotland*	*South East*	*Western*
1	68%	42%	57%	42%	93%
2	30%	54%	38%	53%	7%
3	2%	4%	5%	5%	0%
4	0%	0%	0%	0%	0%
5	0%	0%	0%	0%	0%
Average condition grade	**1.3%**	**1.6%**	**1.5%**	**1.6%**	**1.1%**
Percentage of assets surveyed	**99%**	**50%**	**24%**	**23%**	**26%**

Electrification condition – DC traction contact systems (M16)

Definition

This is a measure of the condition of DC contact systems, on a scale of 1–5, based on physical wear measurement of conductor rail. A condition grade of 1 is good and 5 is poor. The measure excludes any associated equipment (e.g. insulators, anchor assemblies, protective boarding, etc.).

Reporting method

This is in accordance with the company's Asset Reporting Manual procedures.

Reporting confidence

This measure is given a B3 confidence grade.

Commentary

Seventy one per cent of the assets have been assessed during the last ten years and the national average condition score remains at 1.9. This reflects the steady state of renewal activity addressing locations which are in poor condition and some becoming so.

Results

Table 3.38: Table 3.38 Electrification condition – DC traction contact system

Condition grade	*2000/09 6-yr total conductor rail*	*2000/07 7-yr total conductor rail*	*2000/08 8-yr total conductor rail*	*2000/09 9-yr total conductor rail*	*2000/10 10-yr total conductor rail*	*CG*
1	39%	35%	35%	36%	34%	
2	41%	42%	42%	42%	43%	
3	18%	19%	20%	19%	20%	
4	2%	3%	3%	3%	3%	
5	0%	0%	0%	0%	0%	
Average condition grade	**1.8**	**1.9**	**1.9**	**1.9**	**1.9**	**B3**
Percentage of assets surveyed	**69%**	**70%**	**71%**	**71%**	**71%**	

Table 3.39: Electrification condition − DC traction contact system 2009/10 year total

Condition grade	*London North Western*	*South East*	*London North Eastern*
1	57%	34%	-
2	31%	43%	-
3	9%	20%	-
4	2%	3%	-
5	0%	0%	-
Average condition grade	**1.6**	**1.9**	**-**
Percentage of assets surveyed	**37%**	**74%**	**0%**

Note: There are no DC assets in Scotland and Western operating routes. London North Eastern Operating Route has nine km which accounts for 0.2 per cent of the network. This was renewed in the mid 1970s.

Station Stewardship Measure (M17)

Definition

This is the average condition rating of each station where trains make timetabled stops and Network Rail is the operator or the landlord.

The score is calculated by assessing the asset remaining life of key elements of a station by visual inspection and combining into an overall station score. The scale represents the remaining life, as a percentage of the expected life, of all measured assets at a station, on a scale of 1–5 as represented in Table 3.40.

It has been adopted as a standard method for assessing the condition of a variety of asset types.

Regulatory target

We are required to maintain average condition scores within each station category A to F in England, Wales and Scotland and also across all stations in Scotland. The categories were designed to reflect the different sizes and passenger throughput of the stations on the network. The minimum levels of average condition for each station category to be achieved are included in results Table 3.41 as the regulatory target.

Results

Table 3.40: Definition of scoring in the Station Stewardship Measure

Remaining life as a percentage of expected full life	*Condition rating*
76% – 100%	1
46% – 75%	2
16% – 45%	3
1% – 15%	4
0%	5

Table 3.41: Station Stewardship Measure

Station category	*2008/09*	*2009/10*	*Regulatory Target – minimum average score at the end of CP4*
All network			
A	2.33	2.28	2.48
B	2.42	2.40	2.60
C	2.49	2.47	2.65
D	2.53	2.53	2.69
E	2.54	2.52	2.74
F	2.54	2.54	2.71
Scotland (all stations)	2.23	2.24	2.39

Table 3.42: Station Stewardship Measure – comparison of completed NSIP and non-NSIP stations

Station Category	*Regulatory target – Minimum average score at end of CP4*	*Completed NSIP stations*		*All other stations*	
All network	***SSM***	***SSM***	***No. of stations***	***SSM***	***No. of stations***
A	2.48	n/a	0	2.28	22
B	2.60	1.43	1	2.45	58
C	2.65	2.48	5	2.48	193
D	2.69	2.49	7	2.53	254
E	2.74	2.55	7	2.52	598
F	2.71	3.10	7	2.54	1,116
Scotland (all stations)	2.39	n/a	n/a	2.24	325
Network total	**n/a**	**2.41**	**27***	**2.51**	**2,241**

Note: Although 29 stations have been completed as part of the National Stations Improvement Programme, two of these stations (Carmarthen and Middlesbrough) do not yet have Station Stewardship Measures and so have been excluded.

Reporting confidence

The condition of each asset is recorded in our Operational Property Asset System (OPAS). The Station Stewardship Measures scores are based on validated OPAS examination data and generated through an imbedded algorithm within the system. The confidence rating for Station Stewardship Measure is B2. This rating is in contrast to the grade of C4 suggested by Arup, the independent reporter, in a recent audit, but we are yet to be convinced by the Arup assessment and consider that a number of factors where not sufficiently taken into account during the audit. We are also awaiting the analysis and supporting data in order to fully evaluate the findings. Therefore, the measure remains B2 with the plan to close out any significant recommendations made by the reporter before the next audit in Quarter 3 of 2010/11.

Commentary

The latest data indicates a slight improvement to the scores at Category A, B, C and E stations whilst Category D and F stations have remained constant to the condition scores at the end of CP3. The aggregate score for stations in Scotland has dropped by 0.01 to 2.24. However, these are well within the tolerances one would expect for station condition measured in this way, and in the context of assets managed through a programme of cyclical maintenance and renewal activity.

The full reporting functionality of OPAS now allows us to monitor the movement of SSM more closely through the year. During the summer 2010 we will undertake a review of our process and documentation regarding the calculation and aggregation of the Station Stewardship Measure scores.

The narrative below focuses on NSIP enhancements, and with respect to enhancement activity generally we do not consider that this has had a material effect on the Station Stewardship Measure scores at this point.

It has been requested that this year's Annual Return includes a new set of data for those stations (presented by Category A-F):

- where NSIP[1] works have been completed; and
- where there have been no NSIP works completed (i.e. all other stations).

The results of this analysis are shown in Table 3.42, above. It should be noted that NSIP work is targeted at making improvements to the passenger environment and focuses on issues such as personal safety, facility for access and the provision of information. The Station Stewardship Measure focuses on measuring the condition of station assets through the evaluation of asset remaining life and therefore cannot be seen as reflective of NSIP activity. Furthermore, it should be noted that the Station Stewardship Measure is a portfolio level measure used to evaluate the average condition of stations by category across the network and its use at a station level is inconsistent and incomparable. All stations will be surveyed during the course of the control period according to a cyclical pattern but it should be noted that surveys are not undertaken directly after works are completed. The complete population – including all NSIP stations will be surveyed again by the end of 2014/15.

1 The National Stations Improvement Programme (NSIP) is a joint industry initiative, funded primarily by DfT. The five-year programme aims to deliver £165m worth of station improvements to a minimum of 150 medium-sized stations in England and Wales over CP4. Following consultations with Train Operating Companies, 262 stations are currently on the candidate list of stations.

Light Maintenance Depot Stewardship Measure (M19)

Definition

This measure assesses the overall average condition of Light Maintenance Depots (LMDs) where Network Rail has responsibility for the repair of assets by providing, at each year-end, the number of depots in individual average condition ratings of 1–5. Those leased to a Depot Facility Owner on a 'full repairing' basis are excluded from the calculation.

Reporting method

The condition score is an average of the score from 11 elements in the Light Maintenance Depots such as wheel lathes, structure and facilities. The elements are condition rated where one is 'as installed' and five is 'no longer serviceable'.

Reporting confidence

The condition of each the 11 elements (together with other relevant asset information) is recorded in our Operational Property Asset System (OPAS). The LMD scores are based on validated OPAS examination data and generated through an imbedded algorithm within the system. The confidence rating for Light Maintenance Depot Stewardship Measure is B2. This rating is in contrast to the grade of C5 suggested by Arup, the independent reporter, in a recent audit, but we are yet to be convinced by the Arup assessment and consider that a number of factors where not sufficiently taken into account during the audit. We are also awaiting the analysis and supporting data in order to fully evaluate the findings. Therefore, the measure remains B2 with the plan to close out any significant recommendations made by the reporter before the next audit in Quarter 3 of 2010/11.

Commentary

The results for 2009/10 show an improvement in the average condition of all depots from 2.52 to 2.50. The average for Scotland has worsened from 2.56 to 2.65 – this change is representative of a small population of depots in Scotland and deterioration at Perth depot, which has been maintained on a minimum intervention strategy ahead of substantive investment by Transport Scotland in CP4. Work is underway at Perth and we expect the stewardship measure to improve through the remainder of the control period.

Results

Table 3.43: Light Maintenance Depot Stewardship Measure

Light Maintenance Depots (LMDs)	*2008/09 results*	*2009/10 results*	*Delivery Plan target – minimum average score at end of CP4*
England and Wales	2.52	2.47	2.52
Scotland	2.56	2.65	2.56
All LMDs	2.52	2.50	2.52

Section 4 – Activity volumes

Introduction

This section provides data on the level of renewal activity on the network by giving volumes of work undertaken specifically for thirteen separate measures, four for track renewals, five for 'civils' (e.g. bridge) renewals, one for signalling renewals and the following four new measures: level crossing renewals, telecom renewals, tunnel renewals and drainage renewals expenditure. In addition, we have included a summary table of the renewals activity volumes as compared with the CP4 Delivery Plan 2009.

There are no regulatory targets set for the volume of renewal activity.

Track Renewals

With track activity volumes (including rail, sleepers and ballast), a degree of variance from forecasts (as in the Delivery Plan) is expected as details of planned work are refined during the year in response to more detailed site knowledge and engineering priorities being adjusted to focus on key areas for improving asset condition and operational performance.

The total composite volume of plain line (rail, sleepers and ballast) track renewal completed during the year was 1,756 km against the original Delivery Plan of 1,571 km, an over-delivery against original Plan of 185 km. This included 164 km accelerated into 2009/10 from later in CP4, being 37 km accelerated in LNE to capture efficiencies and 127 km accelerated in a campaign renewal approach in LNW. In total 1,353 km was delivered under our core renewal contracts and a further 403 km was delivered by our maintenance teams. The S&C delivered was 319 equivalent units which is close to the Delivery Plan number of 312 equivalent units.

Rail renewed (M20)

Definition

This is the total length of track in kilometres where re-railing has been carried out. This measure counts the total length of plain line track where both rails have been replaced; if one rail is replaced the length counts as half.

Results

Table 4.1: Rail renewed

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Delivery Plan 2009/10 (km)*	*Actual 2009/10 (km)*
Non-WCRM:						
London North Eastern	185	183	196	181	130	184
London North Western	237	189	202	278	109	169
Anglia	101	108	99	*	*	*
Kent	58	57	41	*	*	*
Sussex	27	52	29	330	241	237
Wessex	76	37	91	*	*	*
Western	265	283	237	260	136	140
England & Wales	949	909	895	1049	616	730
Scotland	127	109	96	100	59	80
WCRM	44	10	48	57	N/a	N/a
Network Total	**1,120**	**1,028**	**1,039**	**1,206**	**675**	**810**

Note: *Data for all four South East Routes are combined into Sussex

Sleepers renewed (M21)

Definition

This is the total length of track in kilometres where re-sleepering has been carried out.

Results

Table 4.2: Sleepers renewed: all types

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Delivery Plan 2009/10 (km)*	*Actual 2009/10 (km)*
Non-WCRM:						
London North Eastern	130	137	167	129	86	96
London North Western	114	146	166	150	92	127
Anglia	83	79	67	*	*	*
Kent	27	33	21	*	*	*
Sussex	12	23	17	152	106	96
Wessex	52	29	43	*	*	*
Western	177	211	177	4	90	84
England & Wales	595	658	658	605	374	403
Scotland			57	73	43	35
WCRM:	91	7	48	57	n/a	n/a
Network Total	**744**	**738**	**763**	**735**	**417**	**438**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.3: Concrete sleepers

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Actual 2009/10 (km)*
Non-WCRM:					
London North Eastern	58	67	65	89	79
London North Western	41	108	126	104	84
Anglia	37	*	48	*	*
Kent	27	*	14	*	*
Sussex	12	119	11	92	74
Wessex	48	*	31	*	*
Western	138	167	142	113	72
England & Wales	361	461	437	398	310
Scotland	17	47	30	50	26
WCRM:	91	7	48	57	n/a
Network Total	**469**	**515**	**515**	**505**	**335**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.4: Timber sleepers

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Actual 2009/10 (km)*
Non-WCRM:					
London North Eastern	16	9	7	4	2
London North Western	11	1	1	2	2
Anglia	0	*	0	*	*
Kent	0	*	0	*	*
Sussex	0	1	0	2	1
Wessex	0	*	0	*	*
Western	7	6	0	3	1
England & Wales	34	17	8	11	6
Scotland	2	1	1	0	1
WCRM:	0	0	0	0	n/a
Network Total	**36**	**18**	**9**	**11**	**7**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.5: Steel sleepers

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Actual 2009/10 (km)*
Non-WCRM:					
London North Eastern	58	61	95	36	15
London North Western	60	36	39	44	42
Anglia	47	*	19	*	*
Kent	0	*	7	*	*
Sussex	0	44	5	58	20
Wessex	3	*	12	*	*
Western	32	38	36	59	11
England & Wales	200	179	213	197	88
Scotland	39	25	26	23	8
WCRM:	0	0	0	0	n/a
Network Total	**239**	**204**	**239**	**220**	**96**

Note: *Data for all four South East Routes are combined into Sussex

Ballast renewed (M22)

Definition

This is the total length of track, in kilometres, where re-ballasting has been carried out.

Results

Table 4.6: Ballast renewed: all types

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Delivery Plan 2009/10 (km)*	*Actual 2009/10 (km)*
Non-WCRM:						
London North Eastern	177	256	253	234	164	170
London North Western	128	179	176	149	96	131
Anglia	85	80	67	*	*	*
Kent	27	35	21	*	*	*
Sussex	12	23	17	131	107	95
Wessex	52	29	43	*	*	*
Western	178	162	156	119	74	79
England & Wales	659	764	733	633	441	476
Scotland	59	74	56	73	38	34
WCRM:	81	12	48	57	n/a	n/a
Network Total	**798**	**850**	**837**	**763**	**479**	**509**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.7: Full ballast renewal by excavation

	Actual 2005/06 (km)	*Actual 2006/07 (km)*	*Actual 2007/08 (km)*	*Actual 2008/09 (km)*	*Actual 2009/10 (km)*
Non-WCRM:					
London North Eastern	68	72	76	114	46
London North Western	40	89	115	71	81
Anglia	33	*	38	*	*
Kent	18	*	12	*	*
Sussex	11	90	25	66	63
Wessex	34	*	9	*	*
Western	86	71	48	57	23
England & Wales	290	322	323	308	213
Scotland	20	21	16	35	18
WCRM:	81	12	48	57	n/a
Network Total	**391**	**355**	**387**	**400**	**231**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.8: Partial reballast-automatic ballast cleaning					
	Actual 2005/06 (km)	***Actual 2006/07 (km)***	***Actual 2007/08 (km)***	***Actual 2008/09 (km)***	***Actual 2009/10 (km)***
Non-WCRM:					
London North Eastern	50	123	91	64	85
London North Western	28	54	26	43	6
Anglia	5	*	1	*	*
Kent	2	*	0	*	*
Sussex	0	33	0	35	5
Wessex	3	*	0	*	*
Western	59	54	73	33	44
England & Wales	147	264	191	175	140
Scotland	0	28	13	20	1
WCRM:	0	0	0	0	n/a
Network Total	**147**	**292**	**204**	**195**	**141**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.9: Scarify-reballast with steel sleeper relay					
	Actual 2005/06 (km)	***Actual 2006/07 (km)***	***Actual 2007/08 (km)***	***Actual 2008/09 (km)***	***Actual 2009/10 (km)***
Non-WCRM:					
London North Eastern	58	60	86	56	39
London North Western	61	36	37	35	45
Anglia	46	*	28	*	*
Kent	7	*	9	*	*
Sussex	2	44	18	31	27
Wessex	16	*	7	*	*
Western	32	37	34	28	11
England & Wales	222	177	219	150	122
Scotland	39	25	27	18	15
WCRM:	0	0	0	0	n/a
Network Total	**261**	**202**	**246**	**168**	**137**

Note: *Data for all four South East Routes are combined into Sussex

Switches and crossings renewed (M25)

Definition

This measure records the total number of switches and crossing (S&C) units that have been renewed. The tables include data on the numbers of full renewals, the number of units removed or recovered and the number where asset life has been extended through partial renewal or re-ballasting.

The business plan and our unit cost efficiency assessment include figures for S&C equivalent units to give a better reflection of activity delivered by including partial renewals and removed units as well as full renewals. To convert the data in the tables to equivalent units we use a factor of 1.0 for a full renewal, 0.5 for a removed unit and 0.33 for a partial/ reballasted renewal.

Results

Table 4.10: S&C full renewals

	Actual 2005/06 (units)	*Actual 2006/07 (units)*	*Actual 2007/08 (units)*	*Actual 2008/09 (units)*	*Delivery Plan 2009/10 (units)*	*Actual 2009/10 (units)*
Non-WCRM:						
London North Eastern	75	47	73	93	67	71
London North Western	95	129	109	90	76	61
Anglia	21	17	43	*	*	*
Kent	9	3	2	*	*	*
Sussex	7	9	3	77	36	39
Wessex	69	75	34	*	*	*
Western	80	82	70	50	31	35
England & Wales	356	362	334	310	210	206
Scotland	13	58	39	35	30	25
WCRM:	151	22	63	74	n/a	n/a
Network Total	**520**	**442**	**436**	**419**	**240**	**231**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.11: S&C abandonment

	Actual 2005/06 (units)	*Actual 2006/07 (units)*	*Actual 2007/08 (units)*	*Actual 2008/09 (units)*	*Delivery Plan 2009/10 (units)*	*Actual 2009/10 (units)*
Non-WCRM:						
London North Eastern	11	48	11	34	16	12
London North Western	0	20	10	33	16	18
Anglia	0	*	8	*	*	*
Kent	0	*	0	*	*	*
Sussex	0	2	2	1	13	11
Wessex	2	*	8	*	*	*
Western	24	29	18	8	5	20
England & Wales	26	62	94	76	50	61
Scotland	0	0	14	6	6	5
WCRM:	0	0	0	0	n/a	n/a
Network Total	**26**	**62**	**108**	**82**	**56**	**66**

Note: *Data for all four South East Routes are combined into Sussex

Table 4.12: S&C partial renewals/reballasting

	Actual 2005/06 (units)	*Actual 2006/07 (units)*	*Actual 2007/08 (units)*	*Actual 2008/09 (units)*	*Delivery Plan 2009/10 (units)*	*Actual 2009/10 (units)*
Non-WCRM:						
London North Eastern	3	11	40	7	35	38
London North Western	0	1	9	12	14	30
Anglia	0		29	*	*	*
Kent	6		12	*	*	*
Sussex	5		0	28	72	60
Wessex	38		12	*	*	*
Western	0	6	9	22	0	22
England & Wales	52	18	111	69	121	150
Scotland	0	0	9	18	12	16
WCRM:	0	0	0	0	n/a	n/a
Network Total	**52**	**18**	**120**	**87**	**133**	**166**

Note: *Data for all four South East Routes are combined into Sussex

The figures in the above tables are expressed as actual numbers of units. To convert these into equivalent S&C units we use a factor of 1.0 for full renewals, 0.5 for abandonment and 0.33 for partial renewal. The total number of equivalent S&C units renewed during the year was 319.2, of which 46 were delivered by our maintenance teams.

Signalling renewed (M24)

Definition

This measure reports the total number of signalling equivalent units (SEU) which were commissioned each year. An SEU is defined as each single trackside output function controlled by the interlocking, including every signal, each controlled point end, plungers and any other attribute that require a particular control function and each ground frame. Partial renewals are allocated partial values (50 per cent for external equipment and 45 per cent for an interlocking; the residual 5 per cent is 2 per cent for a control centre and 3 per cent for control equipment). The SEUs recorded do not cover minor works and only include individual schemes with an anticipated forecast cost greater than £5 million but with the exception of stand-alone level crossing projects where one SEU is recorded for renewal of the control circuitry interface (where applicable).

Commentary

During 2009/10 a total of 5,752 SEUs were worked on, resulting in a volume of 813 equivalent SEU commissioned after adjusting for type of work undertaken.

These include 712 SEUs fully renewed and 5,040 SEUs recontrolled resulting in 101 equivalent SEUs.

A description of the types of schemes delivered is as follows:

- 220 SEUs fully renewed as part of the Colchester to Clacton Scheme;
- 274 SEUs fully renewed as part of the South Erewash Scheme;
- 157 SEUs fully renewed as part of the Newport scheme;
- 2875 SEUs recontrolled as part of the Thames Valley Control Centre; and
- 2165 SEUs recontrolled as part of South Wales Control Centre.

The main variance to the forecast is as a result of additional SEUs being commissioned as part of the Newcastle to Carlisle scheme.

Results

Table 4.13: Signalling renewed

	Actual 2005/06 (SEU)	*Actual 2006/07 (SEU)*	*Actual 2007/08 (SEU)*	*Actual 2008/09 (SEU)*	*Delivery Plan 2009/10 (SEU)*	*Actual 2009/10 (SEU)*
WCRM:	–	–	–	–	–	
Non-WCRM:						
London North Eastern	3	322	311	135	1	22
Midland and Continental	–	–	–	173	274	274
London North Western	96	122	405	137	0	0
Anglia	1	15	0	52	220	220
Kent	63	18	77	0	4	4
Sussex	107	0	0	44	0	0
Wessex	0	0	429	59	0	0
Western	7	0	215	0	261	258
England & Wales	277	477	1,437	600	760	778
Scotland	1	4	4	381	32	35
Network Total	**278**	**481**	**1,441**	**991**	**792**	**813**

Note: The Business Plan 2009/10 number above differs slightly to the published CP4 Delivery Plan 2009 because this includes the building of the control centres and part of the Colchester Clacton commissioning work.

Level crossing renewals

Definition

This measure reports the number of level crossings renewed each year by route. Each level crossing accounts for one level crossing equivalent unit (LXEU). If a partial renewal is undertaken then an appropriate part LXEU will be declared. No partial renewals were undertaken this year.

Commentary

Twenty level crossings were renewed nationally last year including five that were delivered as part of the South Erewash scheme and six as part of the Colchester Clacton scheme. This compares to 28 that were planned for the year.

The reason for change is the delay in commissioning of the Clacton element of the Colchester Clacton scheme affecting three crossings with a further five stand alone crossing renewals deferred until next year to make resources available to deliver the Network Operations Schemes.

A new dedicated delivery team dealing only with level crossings now exists within Network Rail. They are principally responsible for the delivery of all stand alone level crossing renewals. We therefore expect that the number of level crossings renewed will increase in future years.

Results

Table 4.14: Number of Level crossings renewed

London North Eastern	3
London North Western	0
Midland & Continental	5
Anglia	6
Kent	0
Sussex	0
Wessex	0
Western	6
England and Wales	20
Scotland	0
Network Total	**20**

Telecom renewals

Definition and reporting method

This measure reports the total number of four categories of telecoms volumes which are commissioned each year. These categories are: Concentrators (split for large and small), Public Emergency Telephone Systems (PETS), Driver Only Operation (DOO) CCTV systems and Voice Recorders. Life extensions and minor works are not reported in this measure.

The volumes commissioned are reported within the P3e system used by Asset Management Delivery teams to monitor and mange the project delivery.

Commentary

The volume of concentrators delivered was about half the delivery plan forecast. This is mainly due to the revision of the commissioning strategy including alignment with enhancement/ resignalling schemes. Some renewals have been deferred to future years as a result of improved asset condition. The majority of the concentrators not delivered in 2009/10 will be delivered in 2010/11 financial year.

A majority of the reduction in PETS volumes delivered in 2009/10 is due to the previous equipment supplier entering administration. The second biggest reason is improved asset condition information. All of the systems are now planned to be delivered in 2010/11 and 2011/12 financial years.

The reduction in DOO systems delivered is due to a revision of the commissioning strategy, the majority of the volumes not delivered in 2009/10 are being delivered in 2010/11.

Although no Voice Recorders were planned for delivery in 2009/10, three units were delivered that had been originally planned for 2008/09 and five units originally planned for 2010/11 were renewed earlier due to worse asset condition than previously understood.

Results

Table 4.15: Telecom renewals

	Large Concentrators	*Small Concentrators*	*PETS*	*DOO CCTV systems*	*Voice Recorders*
London North Eastern	0	1	0	8	3
London North Western	1	10	0	0	0
Midland & Continental	0	0	0	35	0
Anglia	0	5	5	0	0
Kent	0	2	0	194	0
Sussex	0	1	0	10	0
Wessex	1	6	0	0	0
Western	0	2	0	0	0
England and Wales	2	27	5	247	3
Scotland	0	0	0	0	5
Network Total	**2**	**27**	**5**	**247**	**8**
Delivery Plan forecast	**6**	**50**	**70**	**275**	**0**

Civils Activity Volumes

It should be noted that these measures differ from the civils activity volumes measures in the CP4 Delivery Plan 2009. These measures are the historic measures that were agreed with ORR and used throughout CP3 and provide some consistency for comparison.

The tables for M23 to M29 on Civils activity volumes provide a summary of projects completed during Periods 1 to 13 2009/10. Due to a 16 week lag in reporting CAF data, the tables include actual projects submitted in CAF between Periods 1 to 9 and a business plan forecast (accrual) for projects completed between Periods 10 to 13.

Bridge renewals and remediation (M23)

Definition

This is the total number and square area of bridge decks that have been subject to renewal or remediation, with total cost per scheme greater than £100k. The term 'bridge' includes over- and under-bridges, side of line bridges and footbridges.

Results

Forecast figures for 2009/10 were for 225 Bridge renewals and remediations across the network. The actual number of projects that were recorded was 248.

The square metre area of deck replacement has increased slightly from 2008/09 levels from 12,046m^2 to 14,698m^2.

Table 4.16: Bridge renewals and remediation 2009/10: number by task category

	Preventative	*Repair*	*Strengthen*	*Replace*	*Total*
London North Eastern	8	19	10	21	58
London North Western	27	29	27	18	101
Anglia	0	2	2	5	9
Kent	2	5	1	1	9
Sussex	1	0	3	2	6
Wessex	3	1	1	3	8
Western	4	9	3	11	27
England & Wales	**45**	**65**	**47**	**61**	**218**
Scotland	**0**	**6**	**0**	**24**	**30**
Network total	**45**	**71**	**47**	**85**	**248**

Table 4.17: Bridge renewals and remediation: square area of deck replacement (actual sq m)

	2005/06	*2006/07*	*2007/08*	*2008/09*	*2009/10*
London North Eastern	1,747	824	4,610	2,870	3,957
London North Western	1,866	6,993	7,854	2,776	4,440
Anglia	0	0	0	712	458
Kent	98	3,757	0	0	284
Sussex	18	155	75	883	736
Wessex	135	120	537	92	316
Western	1,079	218	3,657	908	2,785
England & Wales	**4,943**	**12,067**	**16,732**	**8,240**	**12,976**
Scotland	**489**	**974**	**8,926**	**3,806**	**1,722**
Network total	**5,432**	**13,041**	**25,658**	**12,046**	**14,698**

Culverts renewals and remediation (M26)

Definition

This is the total number of culverts that have been renewed or where major components have been replaced with a total cost per scheme greater than £50k.

Results

Forecast figures for 2009/10 were for 17 culvert projects but the actual outturn for the year was 25, a 47 per cent increase.

Table 4.18: Culvert renewals and remediation 2009/10: number by task category

	Preventative	*Repair*	*Replace*	*Total*
London North Eastern	0	2	6	8
London North Western	0	5	5	10
Anglia	0	0	0	0
Kent	0	0	0	0
Sussex	0	0	0	0
Wessex	0	0	0	0
Western	0	1	0	1
England & Wales	**0**	**8**	**11**	**19**
Scotland	**0**	**0**	**6**	**6**
Network total	**0**	**8**	**17**	**25**

Retaining walls remediation (M27)

Definition

This is the total number and area in square metres of retaining walls of scheme value greater than £50k where renewal works have been carried out.

Results

Forecast figures for 2009/10 were for 5 retaining wall projects and the actual outturn for the year was 5. The actual metre squared area renewed has dropped from the 2008/09 levels by 29 per cent, which is a similar drop from 2007/08 to 2008/09. The metre squared area renewed is now back in line with levels from previous years.

Table 4.19: Retaining wall renewals and remediation 2009/10: number by task category

	Preventative	*Repair*	*Replace*	*Total*
London North Eastern	0	1	1	2
London North Western	0	0	0	0
Anglia	0	0	0	0
Kent	0	0	0	0
Sussex	0	0	0	0
Wessex	0	0	0	0
Western	0	2	0	2
England & Wales	**0**	**3**	**1**	**4**
Scotland	**0**	**1**	**0**	**1**
Network total	**0**	**4**	**1**	**5**

Table 4.20: Retaining wall renewed: area (actual sq m)

	2005/06	*2006/07*	*2007/08*	*2008/09*	*2009/10*
London North Eastern	200	2,240	2,260	110	102
London North Western	0	0	11,779	2,517	0
Anglia	0	0	570	211	0
Kent	800	0	375	0	0
Sussex	6	0	1,800	2,249	0
Wessex	70	0	362	600	0
Western	940	0	61	100	1,635
England & Wales	**2,016**	**2,240**	**17,207**	**5,787**	**1,737**
Scotland	**0**	**0**	**243**	**135**	**0**
Network total	**2,016**	**2,240**	**17,450**	**5,922**	**1,737**

Earthwork remediation (M28)

Definition

This is the total number of earthwork schemes that have been subject to remediation, with total cost per scheme greater than £100k.

Results

Table 4.21: Earthworks Remediation Projects 2009/10: number by task category

	Preventative	*Repair (emergency only)*	*Total*
London North Eastern	21	2	23
London North Western	17	2	19
Anglia	3	2	5
Kent	3	1	4
Sussex	2	1	3
Wessex	3	3	6
Western	6	18	24
England & Wales	**55**	**29**	**84**
Scotland	**25**	**4**	**29**
Network total	**80**	**33**	**113**

Tunnel remediation (M29)

Definition

The total number of remediation schemes on tunnels with a total cost per scheme greater than £50k.

Results

Forecast figures for 2009/10 were for 16 tunnel projects but the actual outturn for the year was 24, a 50 per cent increase.

Table 4.22: Tunnel renewals 2009/10: number by task category

	Preventative	*Repair*	*Total*
London North Eastern	5	2	7
London North Western	0	4	4
Anglia	0	0	0
Kent	0	7	7
Sussex	0	1	1
Wessex	0	3	3
Western	0	1	1
England & Wales	**5**	**18**	**23**
Scotland	**0**	**1**	**1**
Network total	**5**	**19**	**24**

Drainage renewals expenditure

Definition and reporting method

This is the first year that we are reporting this measure.

Drainage activities are planned in the same way as other delivery activities. Costs are apportioned to those activities in accordance with the normal commercial administration of the projects in the delivery portfolio. Each project is attributable to a Route and that enables the costs to be summarised by Route in a way that is consistent with the NR process for accruing costs. The drainage renewal expenditure reported here covers all types of drainage work.

Results

The delivery total of £5.46 million is consistent with the Delivery Plan forecast.

Commentary

Delivery of track drainage has become an area of focus for this control period. In the first year of the control period, time and resources have been spent identifying through survey and validation the right sites to place within the planning sequence. We are planning to increase the level of drainage renewal over the next few years and expect total CP4 expenditure will be about £100 million.

Table 4.23: Expenditure on drainage renewals

	£ million
London North Eastern	1.73
London North Western	0.89
Midland & Continental	–
Anglia	*
Kent	*
Sussex	1.8
Wessex	*
Western	0.62
England and Wales	**5.04**
Scotland	**0.42**
Network Total	**5.46**

Note: *Data for all four South East Routes are combined into Sussex

Renewal activity volumes

Table 4.24 provides an overall picture of asset renewals delivered compared to planned volumes. It reflects the activity volumes in the CP4 Delivery Plan 2009. The measures for 'Civils' below are slightly different to the 'Civils' activity volume measures (M23, M26 – M29) reported earlier in this section as the Civils activity measures below align with those in the CP4 Delivery Plan 2009.

Table 4.24: Renewal Activity Volumes in 2009/10: Actual compared to delivery plan

Great Britain	*Actual*	*Delivery Plan*	*Variance*	*Variance %*
Track				
Plain Line (kms)	1,756	1,571	185	12
S&C (eq.Units)	319	312	7	2
Civils				
Overbridges (sq ms)	5,235	6,235	(1,000)	(16)
Underbridges (sq ms)	75,298	60,573	14,725	24
Bridgeguard 3 (sq ms)	2,985	2,838	147	5
Footbridges (sq ms)	1,271	925	346	37
Tunnels (sq ms)	11,664	11,757	(93)	(1)
Culverts (sq ms)	1,416	871	545	63
Retaining walls (sq ms)	2,153	2,511	(358)	(14)
Earthworks (sq ms)	405,898	323,519	82,379	25
Coastal/estuary defence (ms)	541	1,766	(1,225)	(69)
Signalling (SEUs)				
Signalling Equivalent Units (conventional)	813	792	21	3
Signalling Equivalent Units (ERTMS)	–	–	–	
Level crossings (no.)	20	28	8	(29)
Telecoms				
Concentrators Large (No.)	2	6	(4)	(67)
Concentrators Small (No.)	27	50	(23)	(46)
DOO CCTV Systems (Systems)	247	275	(28)	(10)
PET Systems (No)	5	70	(65)	(93)
Voice Recorder (No)	8	0	8	-
Electrification				
HV Switchgear (Circuit Breakers)	123	50	73	146
AC GSP transformer (No)	2	2	0	0
AC GSP cable (Km)	0	1	(1)	(100)
Booster transformers (No.)	48	92	(44)	(48)
OLE				
OLE re-wiring (Wire runs)	63	82	(19)	(23)
OLE campaign changes (Wire runs)	693	1,295	(602)	(46)
OLE Structures (No.)	125	83	42	51
Conductor Rail (km)	0	45	(45)	(100)
DC				
HV Switchgear (No.)	69	108	(39)	(36)
HV Cables (km)	58	56	2	4
LV Switchgear (No.)	58	128	(70)	(55)
Transformers / Rectifiers (No.)	33	44	(11)	(25)
LV cabling (km)	0	27	(27)	(100)
Plant & Machinery				
Points Heaters (No.)	230	508	(278)	(55)

Section 5 – Safety and Environment

Introduction

This section reports on our principal safety KPIs and our environmental measures and initiatives.

Safety

We are reporting on key aspects of System Safety using the following KPIs:

- infrastructure wrong side failures (50+ severity score);
- level crossing misuse;
- category A Signals Passed At Danger (SPADs);
- irregular working; and
- criminal damage.

System Safety is an indication of the overall safety of passengers, workforce and the public in respect of the risks associated with all aspects of the design, construction, maintenance and operation of the railway system.

In addition, specifically on workforce safety we are reporting on the Workforce Safety (Fatalities and Weighted Injuries Rate measure).

We are also reporting the new passenger safety indicator measure, which is an indicator of passenger safety risk associated with Network Rail activity.

Environment

For the first time we are able to report on measures related to all of the following areas:

- energy;
- carbon dioxide emissions;
- expenditure on sustainable materials;
- deployable water;
- waste;
- environmental incidents; and
- sites of Special Scientific Interest.

We are also reporting the progress throughout the year of our environmental initiatives. Information on the safety and environment enhancements is included in the section on Enhancements.

Passenger Safety

Definition and reporting method

This measure is a combination of two separate data sources, the train accident risk data from the Precursor Indicator Model (PIM) and weighted fatality and injury data from station level crossings and Network Rail managed stations. The PIM is produced by the Rail Safety & Standards Board (RSSB) every quarter, and provides an indication on the trend in train accident risk by looking at the key precursor events (e.g. broken rails). A subset of the PIM is calculated, identifying passenger risks only, and it is that number that is used in calculating the Passenger Safety Indicator (PSI). The main reason the PIM is used for assessing train accident risk is to avoid the effect of low frequency, high consequence events distorting the KPIs (any actual accidents are highlighted elsewhere in the SEAR).

The remaining element of PSI is calculated as the weighted number of personal injuries to passengers, at station level crossings and Network Rail Managed Stations only, reported in SMIS (Safety Management Information System). This comprises those defined as reportable under RIDDOR 95 as well as those which are not reportable, normalised per billion passenger kilometres.

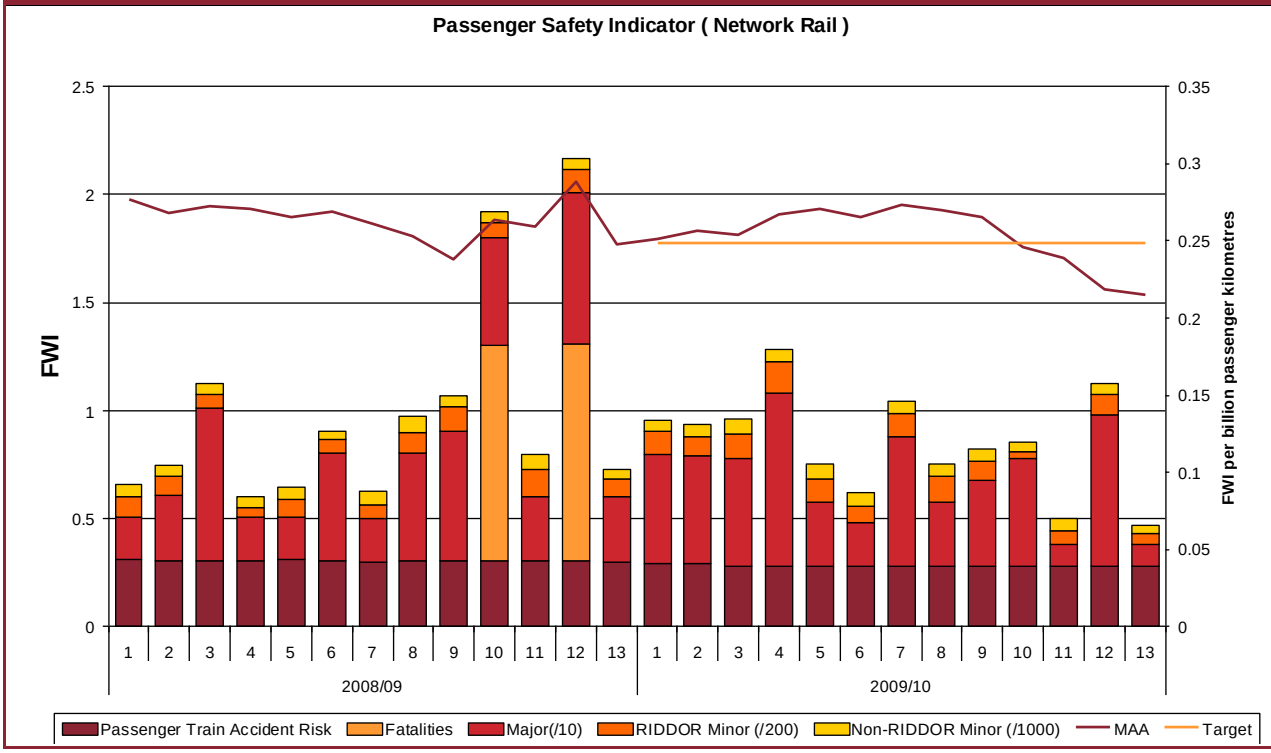
Results

The thirteen period average PSI at the end of Period 13 for 2009/10 is 0.215, which is 13.5 per cent ahead of the year end target of 0.248.

Table 5.1: Passenger safety

	2006/07	*2007/08*	*2008/09*	*2009/10*
PSI (MAA)	N/A	N/A	0.252	0.215

Figure 5.1: Passenger Safety Indicator – Network Rail



Commentary

There were no passenger fatalities at station level crossings and Network Rail managed stations. The major influence on the figure is the number of passenger major injuries through slips, trips and falls on Network Rail managed stations, the majority of which are as a result of passenger behaviour.

Train accident risk, measured by the train accident Precursor Indicator Model (PIM), represents approximately 15 per cent of the PSI, and has demonstrated a long term trend of improvement over the last eight years, with the overall risk reducing by 61 per cent from the baseline of March 2002. This trend had flattened between 2006 and 2008 with the index remaining relatively constant between January 2006 (52.5) and December 2008 (52.1). However, during 2009 the risk has reduced significantly, reaching an all time low of 37.4 at the end of September 2009. The last quarter of 2009 has seen the overall index rise slightly to 38.6. This is primarily due to increases in level crossing misuse, objects on the line and SPADs, predominantly weather related, and targeted actions are in place to address these.

Workforce Safety (Fatalities and Weighted Injuries Rate)

Definition

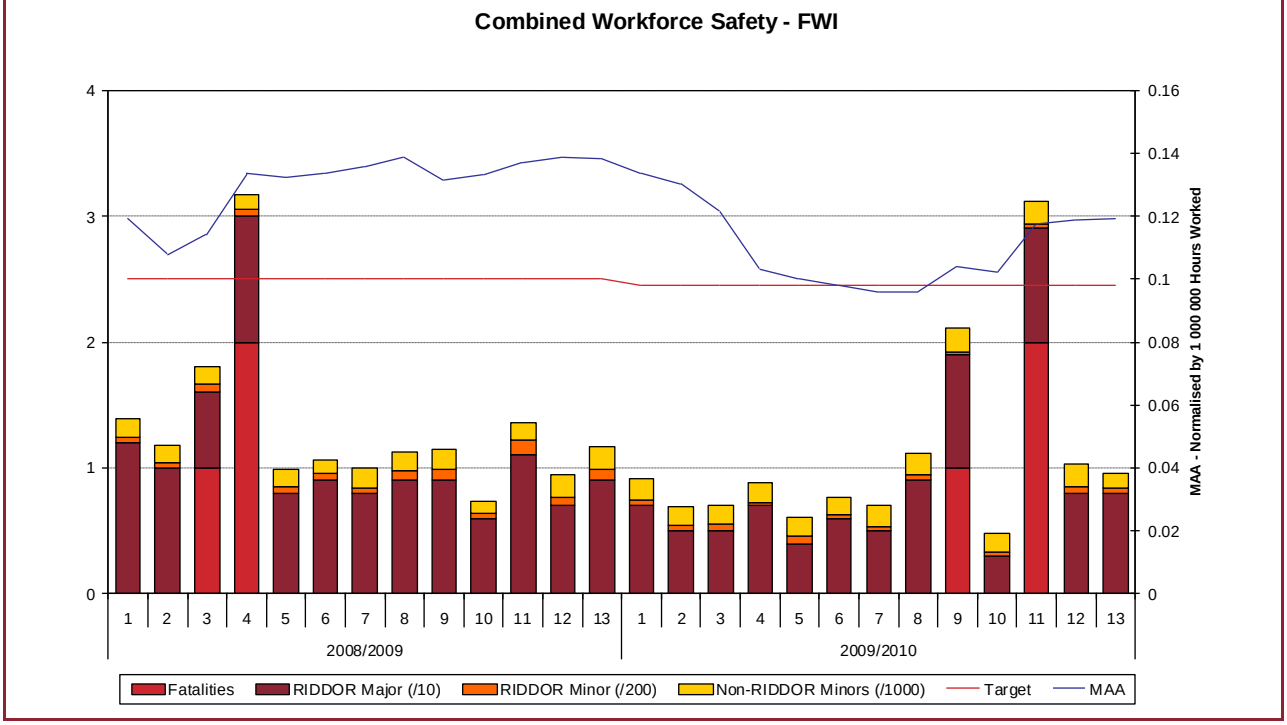
This measure compares the weighted number of personal injuries that are reported in the Safety Management Information System (SMIS) for all Network Rail staff and contractors working on Network Rail's managed infrastructure, normalised per 1,000,000 hours worked. This measure provides information to help monitor and control accidents and injuries to the workforce.

Results

Table 5.2: Table 5.2 Workforce safety

	2006/07	2007/08	2008/09	2009/10
AFR (MAA)	0.263	0.226	0.231	0.178
Fatalities	0	2	3	3
Major injuries	69	79	113	85
Lost time injuries	216	189	167	124
FWI (MAA)	N/A	0.115	0.138	0.120

Figure 5.2: Combined Workforce Fatalities and Weighted Injuries Rate – National Performance



Commentary

The Workforce Fatalities and Weighted Injuries Rate for Network Rail employees and contractors for 2009/10 was 0.120, which is a 15 per cent improvement over the figure in 2008/09, but is higher than our internal target of 0.098. The Accident Frequency Rate figure of 0.178 compares favourably to the national rate for the UK road transport (construction and maintenance) industry which, in 2009/10 stood at approximately 0.290.

Tragically there was one Network Rail employee fatality and two contractor employee fatalities during 2009/10. On 2 December 2009, a Network Rail employee was struck by a train and fatally injured whilst undertaking lookout duties at Whitehall Junction in Leeds. On 27 January 2010, an employee of ThyssenKrupp Palmers working on the Forth Bridge, fell from height whilst using an unauthorised walking route and sustained fatal injuries. On 28 January 2010, an employee of ThyssenKrupp Palmers inhaled toxic fumes and died whilst undertaking shot-blasting and painting works on the Tay Bridge.

Key initiatives during the year which contributed to the management of workforce safety, health and welfare were:

- The 'Safety 365' safety awareness campaign, which used a variety of media and covered specific track worker and general safety topics. Subjects included the hazards of slips, trips and falls, working in the vicinity of plant and falling/flying objects. The media used included: 'Safety 365' communications trucks that visit worksites and are used to brief worksite operatives on the latest safety topics; an "Ask the Experts" webpage on the Safety Central website; briefing packs for use by line managers; DVDs (e.g. Frontline Focus, E-learning); animated reconstructions of accidents to the workforce and members of the public (e.g. workforce incidents at Kennington and Glen Garry); posters; booklets; desk calendars; and pocket cards.
- The development of a Working at Height policy, strategy and supporting processes for risk assessment, work instruction compilation, training and equipment selection.
- Further development of the safety league table, introduced last year for all maintenance delivery units and which provides internal benchmarking between the delivery units and rewards teams for proactive safety activities and for improving their safety performance. This continues to be very effective at improving behaviours. The steady improvement in this leading indicator has continued in 2009/10.
- The content of the Maintenance Task Risk Control Manual, introduced in the previous year and which contains generic risk assessments and control measures for all work undertaken in Maintenance, was reviewed, revised and re-distributed.
- All Maintenance delivery units have continued to develop and implement their own local accident reduction plans. These are designed to focus on local issues that have been identified through work activity risk assessments and local accident investigations. They give local ownership to issues and empower people to deliver local resolution of safety hazards/risks. Achievement against the plans is monitored 'within the line' through the Monthly Business Review (MBR) process in an effort to achieve understanding of trends, consistent application of best practice and delivery against plan commitments.
- Controller of Site Safety (COSS) and Safety System of Work (SSOW) working groups were established and workshops held at delivery units to develop improvements to the safe system of work planning process, and to improve the training, assessment and support provided to the COSS role and the way in which the role is undertaken.
- Promoting a collaborative approach to the management of workforce safety, health and welfare with contractors and suppliers through the Project Safety Leadership Group and the Supplier Safety Forum.
- Continuing the behavioural change programme (previously known as MAD – Making a Difference).
- Display screen equipment risk assessment and training, and health screening and surveillance for Noise Induced Hearing Loss and Hand Arm Vibration Syndrome.
- Health promotion and education campaigns, including 'health fairs' and health and wellbeing fact sheets, designed to help the workforce to understand what they can do to help themselves.
- Rehabilitation physiotherapy for employees with musculoskeletal disorders due to work related injury.
- Stress counselling and the provision of work/life balance literature.
- The programme to install suitable and sufficient welfare facilities for track workers, continued during 2009/10.

Infrastructure wrong side failures

Definition

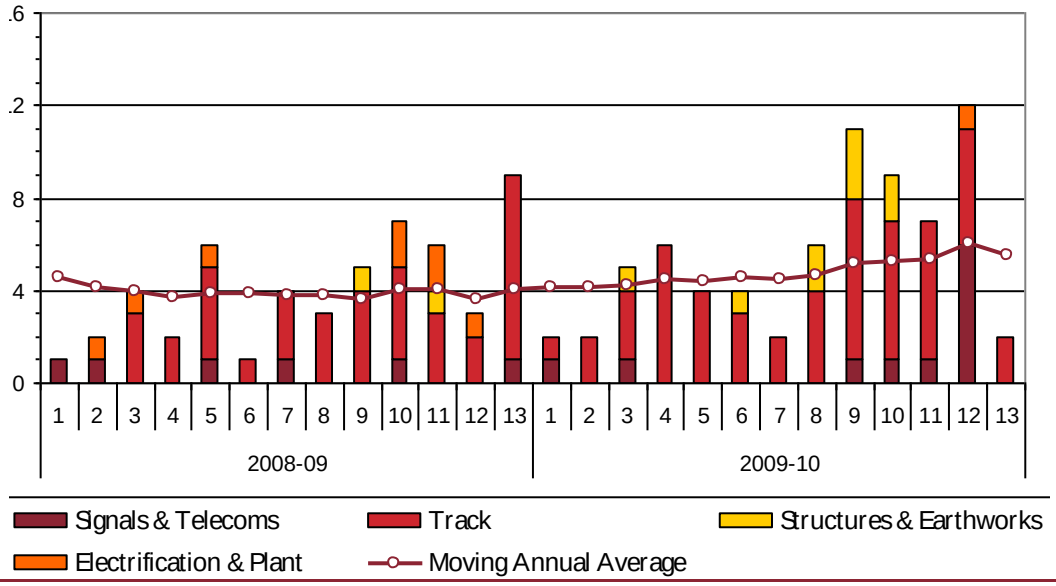
This measure comprises the number of higher risk (hazard index of 50 or above) failures of infrastructure. This measure identifies failure areas where improvement to the infrastructure is required or perverse equipment behaviour manifests itself when new equipment is introduced.

Results

Table 5.3: Infrastructure wrong side failures

	2006/07	*2007/08*	*2008/09*	*2009/10*
Signals and Telecoms	13	5	6	11
Track	36	44	37	51
Structures and Earthworks	9	6	2	11
Electrification and Plant	8	5	8	1
Total	**66**	**60**	**53**	**72**

Figure 5.3: Infrastructure wrong side failures Infrastructure wrong side failures



Commentary

There was no specific target set for infrastructure wrong-side failures, other than to continuously reduce them. During 2009/10, the trend has worsened slightly.

38 per cent of all incidents occurred between periods 9 and 11 of this year. A large proportion of these were attributable to the heavy snowfall encountered during the winter months.

Broken rails accounted for 50 per cent of all reportable wrong side failures. Many of these have been clean vertical breaks (69 per cent) which present a lower risk than breaks at rail ends or welds. The New Measurement Train (NMT) and other train-based measurement systems continue to be deployed in an ongoing effort to reduce human intervention/error and to detect potential failures before they become serious from a safety perspective.

The numbers of high risk failures attributable to signals and telecommunications equipment and structures and earthworks have increased compared to last year. In contrast, the numbers of electrification and plant higher risk failures have reduced significantly. There was one electrification and plant incident compared with eight during 2008/09.

There has been an increase in the number of reported incidents of livestock incursion, specifically cattle, attaining a hazard index over 50 when compared with the previous year (twelve incidents in 2009/10 compared to two in 2008/09). Targeted actions have been developed to address this risk.

We continue to focus on understanding and tackling the root causes of long-standing issues that affect asset performance. In particular, components that are not sufficiently reliable are being identified and progressively replaced on a focused campaign basis.

Level crossing misuse

Definition

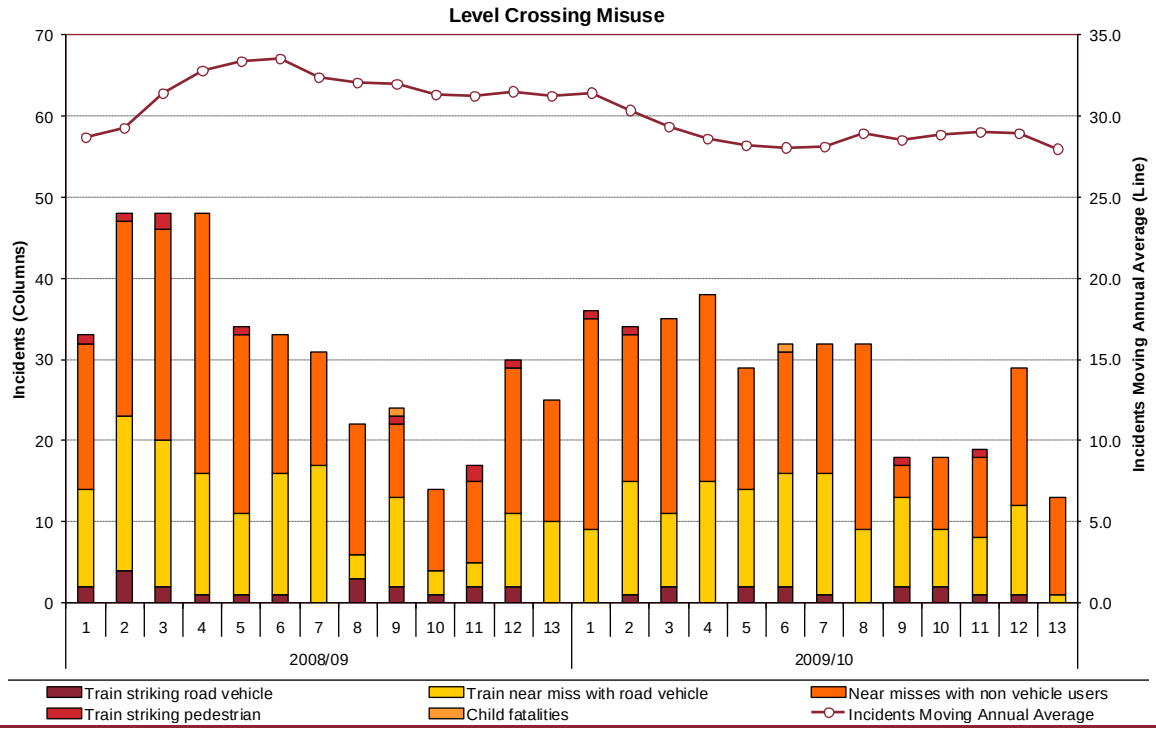
This measure comprises the number of incidents where a motorised vehicle is struck by, or strikes a train, or any incident where a non-motorised vehicle or pedestrian is struck by a train, or any near miss with a motorised vehicle, or non-motorised vehicle or pedestrian.

Results

Table 5.4: Level crossing misuse

	2006/07	*2007/08*	*2008/09*	*2009/10*
Level crossing misuse (MAA)	26.4	28.5	31.5	28.2
Collisions with road vehicles	13	8	21	14
Train striking pedestrian	3	8	12	7
Near miss with road vehicle	162	154	145	137
Near miss with non-vehicle users	165	200	231	209

Figure 5.4: Level crossing misuse



Commentary

Level Crossing misuse continues to constitute the largest single category of train accident risk. However, only approximately 20 per cent of this risk is to people inside the train and 80 per cent of the risk to people inside the road vehicles.

Increased efforts to reduce level crossing risk in the past year have meant that there has been a decrease in the number of significant level crossing misuse events in 2009/10. There were five pedestrian fatalities (one of whom was a child), one bicyclist and five road vehicle occupant fatalities.

During 2009/10 Network Rail continued its strategy, as outlined in the policy for managing level crossing risk which is predicated on the four 'E's principle:

- Education – educating crossing users on how to use level crossings correctly and highlighting the dangers of misuse;
- Enforcement – taking appropriate action to assist the police in identifying those who deliberately endanger others through their actions and pressing for conviction;
- Enablement – developing appropriate techniques, processes, models and relationships/partnerships to improve the management and understanding of level crossing risk; and
- Engineering – requirement that level crossings are regularly inspected and correctly maintained. Additionally, where it is reasonably practicable to do so, enhancing crossing safety through means such as closure / diversion or provision of additional safety features / equipment.

In January 2007 Network Rail commenced its new programme of assessing the risks at all level crossings using the All Level Crossing Risk Model (ALCRM) and all level crossings had been assessed, to plan, by January 2010. The use of the ALCRM allows Network Rail to identify those crossings that present the greatest risk and to prioritise those crossings for consideration in terms of potential enhancement. Necessary actions are determined using cost benefit analysis tools to determine what is 'reasonably practicable'.

Network Rail has continued to evolve and implement the 'Don't Run the Risk' public awareness campaign to educate users on how to use level crossings correctly and to warn them of the dangers of misuse. This included new hard hitting national prime time radio adverts, supported by local radio, regional press adverts, outdoor posters and direct marketing to local residents, targeting "hot spot" level crossings with the highest levels of misuse. Network Rail is also continuing to work closely with the farming community, and other user-worked crossing users, to manage level crossing risk through improved education of users, including those businesses that regularly access properties via level crossings (for example, Royal Mail and utility companies), and providing an appreciation of the risk that level crossings can present.

Throughout CP4 a number of further initiatives are planned to look to further reduce level crossing risk across each of the four strategic 'E' elements:

- investigation, trial and deployment of measures to reduce the cost associated with level crossing closures such as 'modular'/standard bridge designs, new construction material /techniques/processes and challenging current construction standards (where appropriate);
- realising the benefits from the formation of Road-Rail Partnership Groups to identify measures to address level crossing safety from both a highway and railway perspective;
- trialling of new technology which could reduce the cost of providing improved crossing safety features/equipment (e.g. conversion of automatic half-barrier crossings to automatic full-barrier crossings with obstacle detection). In terms of cost benefit analysis, this will enable more solutions to become 'reasonably practicable' where the associated implementation costs can be reduced;
- realising the benefits from reducing the costs of level crossing design through bringing crossing renewal design in-house and reducing maintenance costs through the use of new technology to improve asset availability and reliability (e.g. replacement of filament bulbs with LEDs); and
- realising the benefits from the National Level Crossing Safety Group – recently established but already having a positive impact.

Signals Passed At Danger (SPADs) Category 'A'

Definition

This measure reports all Category A SPADs. This indicates the signals passed while displaying a stop aspect for intrusions into a non-permitted route, which can lead to collision when a stop aspect or indication was displayed correctly, in sufficient time for the train to be stopped at the signal.

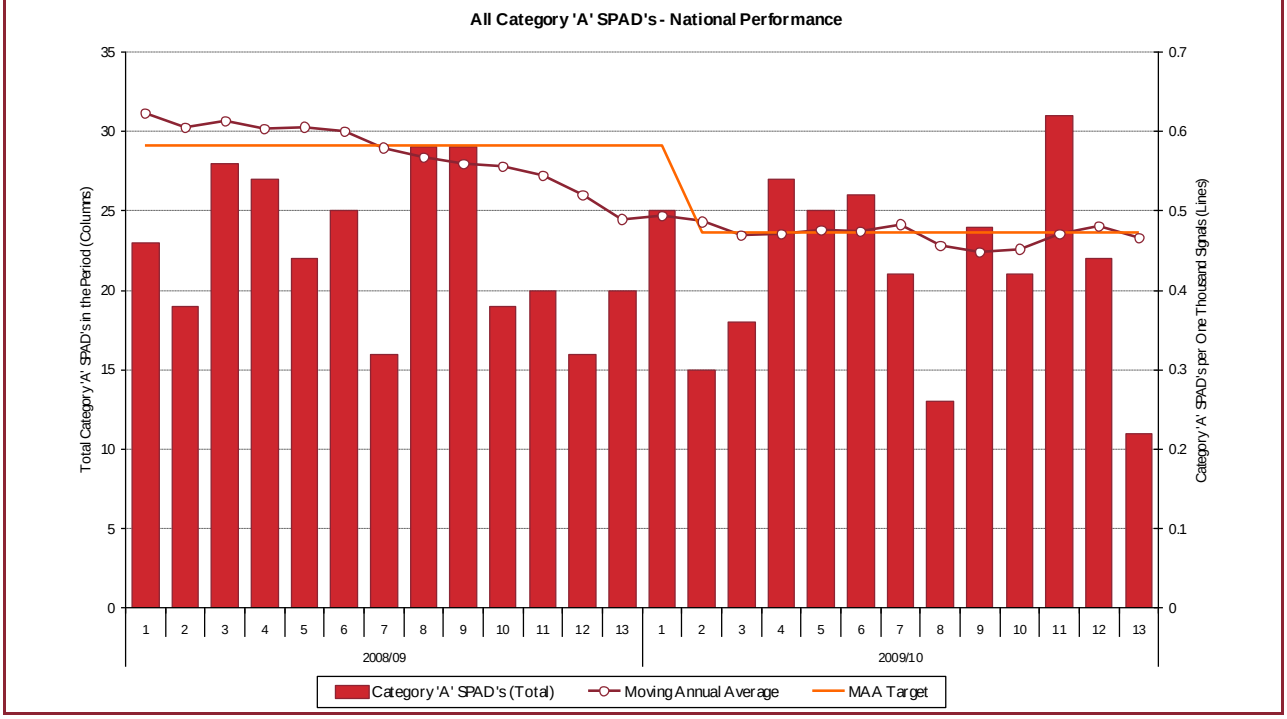
Results

There were 277 Category A SPADs in 2009/10, compared with 293 the previous year.

Table 5.5: Signals Passed at Danger (SPADS)

	2006/07	*2007/08*	*2008/09*	*2009/10*
Cat A SPADs per 1,000 signals	0.594	0.614	0.493	0.469
Cat A SPADs	334	354	293	277

Figure 5.5: Signals Passed at Danger (SPADs)



Commentary

Since the introduction of the Train Protection Warning System (TPWS) in 2002/03, the risk from Category 'A' Signals Passed at Danger (SPAD) has reduced by over 85 per cent and, as at the end of February 2010, the risk from SPADs was 7.38 per cent of the March 2001 benchmark level.

Ongoing actions/ initiatives that are being taken to reduce Category 'A' SPAD risk include:

- local initiatives within area Operations Risk and Mitigation (OPSRAM) groups to address site specific SPAD related issues through selected improvement programmes. These are joint groups chaired by Network Rail, with membership from the respective Train Operating Companies (TOCs);
- continued reporting and analysis of all SPAD incidents, following through investigations at the appropriate level and addressing any resulting recommendations;
- a continuing programme of signalling renewal schemes where opportunity is being taken to bring the signalling equipment and installation up to the latest design and implementation standards in order to minimise SPAD risk. This includes utilisation of new technology to optimise the visibility of signals (e.g. LED signal heads), consideration of signalling layout features and the optimisation of TPWS installations; and
- sharing of best practice through the Operations Focus Group and other industry forums. These involve a variety of stakeholders including Network Rail, Railway Safety & Standards Board (RSSB) and Train Operating Companies and Freight Operating Companies (TOCs and FOCs).

These efforts will continue, in conjunction with additional train operator led initiatives, over the next year. Emphasis in recent years has been placed on infrastructure improvements designed to reduce the likelihood of SPADs and to reduce the potential impact of any SPAD (introduction of TPWS and TPWS+ as an example). However, still more needs to be done to understand and manage driver behaviour, and we are continuing to work collaboratively with TOCs in this area.

Irregular Working

Definition

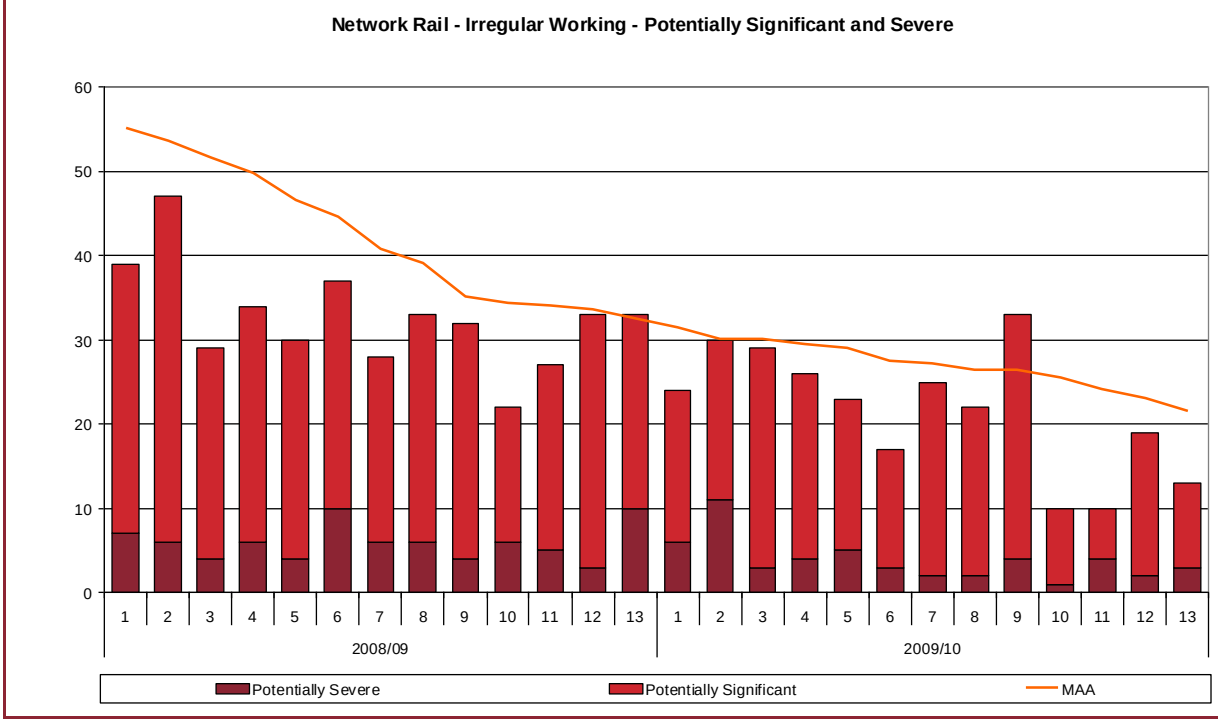
This measure comprises the number of incidents of irregular working that introduce significant risk to the railway (categorised as potentially significant and potentially severe) based on an evaluation of their actual or potential consequence.

Results

Table 5.6: Irregular Working

	2006/07	*2007/08*	*2008/09*	*2009/10*
Potentially significant	800	674	347	231
Potentially severe	121	72	77	50
Irregular working MAA	70.85	57.38	32.61	21.61

Figure 5.6: Irregular Working



Commentary

Irregular working covers any act by a person that has a direct potential for safety loss. Such an act may occur when a rule, process or procedure is not correctly followed. In April 2008 Network Rail introduced a new process for risk ranking irregular working events based on the likelihood and consequence of safety loss. At the same time a new key performance indicator relating to potentially significant and potentially severe irregular working events was also introduced, based on these risk rankings. Irregular working includes construction and maintenance activities which were not included in the previous indicator on operating irregularities and which it has superseded. There was no specific target set for irregular working events other than to continuously improve.

Over the course of the year, the trend in potentially significant and potentially severe irregular working events has continually improved. This continues the improving trend previously experienced with operating irregularities and has been driven by a four point cross-functional plan. This builds on initiatives already in place, for engineering possessions; rules, procedures and methods of working, communications and safety culture and behaviour:

- Controller of Site Safety (COSS) and Safety System of Work (SSOW) working groups were established and workshops held at delivery units designed to develop improvements to the safe system of work planning process, and to improve the training, assessment and support provided to the COSS role and the way in which the role is undertaken;
- the Rule Book simplification project is a joint project with the RSSB to simplify modules of the current Rule Book and it has developed the first tranche of simplified rules and associated role-based handbooks;
- a review has been carried out on the work package planning process. A cross industry workshop was held and the output of this was used to produce briefing materials for Network Rail and the project delivery contractors. Briefing documents have been produced and briefed to relevant directors and senior managers, planners, and front-line workforce;
- continued application of the existing ‘Safety 365’ campaign to promote safe working and in giving teams ownership of, and the opportunity to take pride in, their safety performance; and
- a survey of safety culture within Network Rail was carried out in July/August 2009. A cross-functional group identified improvement actions that have started to be implemented, and that build on the strengths identified by the survey and actions for improvement in areas of weakness.

An irregular working cross-functional working group has again been set up to analyse the root causes of potentially significant and potentially severe irregular working events and to inform the development of targeted action plans to further address this risk.

Criminal damage

Definition

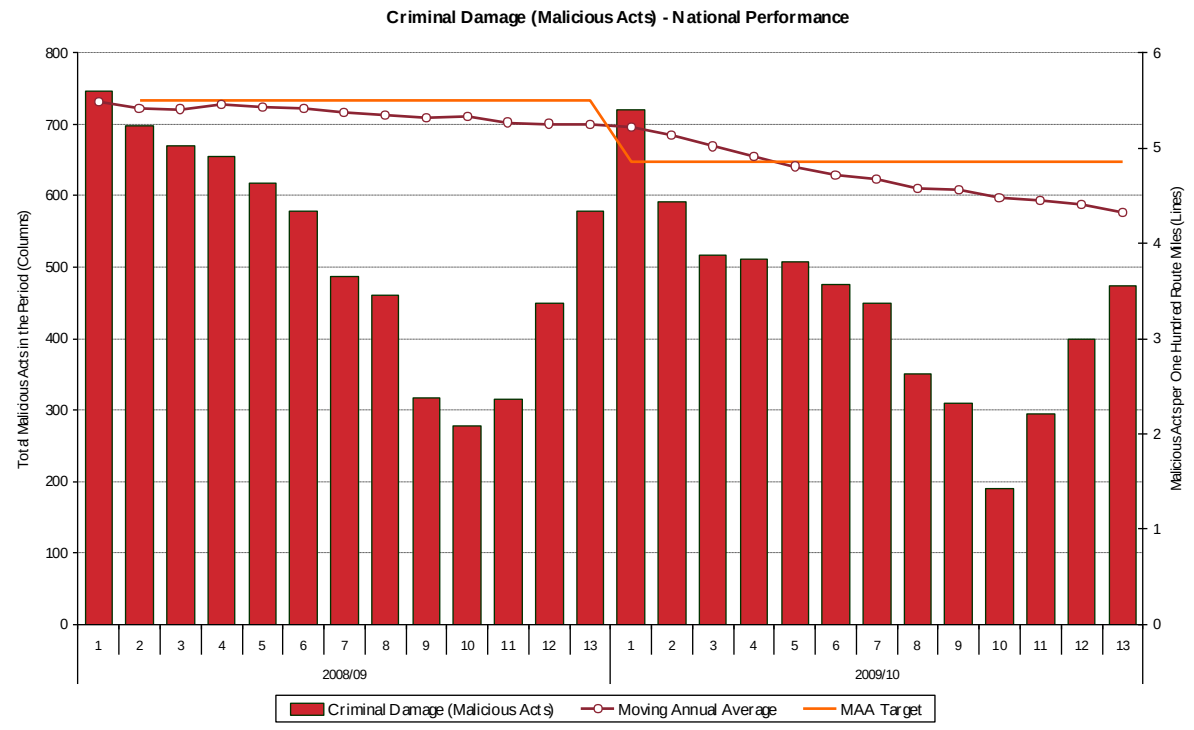
This comprises the number of malicious acts on, or directly affecting, Network Rail infrastructure, normalised per 100 route miles.

Results

Table 5.7: Criminal damage (malicious acts)

	2006/07	2007/08	2008/09	2009/10
Malicious acts per 100 route miles	6.285	5.539	5.245	4.3

Figure 5.7: Criminal damage (malicious acts) – National Performance



Commentary

The number of malicious acts during 2009/10 has continued to reduce significantly compared with previous years. The normalised moving annual average at the end of 2009/10 is 13.5 per cent lower than at the end of 2008/09.

Network Rail has continued to tackle crime on the railway, in co-operation with our industry partners, through a combination of public education, law enforcement and improved deterrents such as installation of CCTV cameras at more stations and known crime hotspots, and continued improvements to lineside fencing. The theft of copper cable is increasing again in line with the increase in the price of copper. Direct action has been taken to tackle this issue through increased vigilance, increased security, collaborative working with the British Transport Police and civil police forces, and other initiatives such as establishing cable theft hotlines.

Specific initiatives to tackle railway crime include continuing:

- to evolve the 'No Messin' campaign that seeks to educate 10 to 16 year olds in the dangers of playing on the railway, placing objects on the line and throwing stones at trains. The campaign includes the No Messin'! website (www.no-messin.com) that contains videos, photos, interviews, games, real life information and competitions for young people, all designed to highlight the risks of playing on the railway;
- realisation of the benefits of establishing the Community Safety Steering Group (CSSG) and Community Safety Partnership Groups (CSPGs) which provide a multi-level multi-stakeholder co-ordinated approach to managing risk associated with railway crime;
- use of the Network Rail helicopter, in conjunction with the British Transport Police, to monitor route crime hotspots, or follow up reported incidents, with a view to securing arrest and gaining increased success in prosecution; and
- use of undercover surveillance cameras at route crime hotspots to collect evidence of trespass and vandalism offences as they are committed.

Environment

Introduction

We have continued to make good progress in environmental performance to deliver our three core aims:

- to achieve sustainable consumption and production;
- to be more energy efficient and reduce reliance on fossil fuels in running the railway; and
- to protect the natural environment.

As part of our Corporate Responsibility report, we have a comprehensive section on the environment and our environmental plans and performance. The table below (5.8) also provides information on our environmental performance and commentary on our environmental initiatives is at the end of this section.

Environmental performance table

Table 5.8: Environmental measures

Measure	*Definition*	*2009/10 Results*
Energy	**Non-Traction**	
	The number of electricity kWh and volume of gas, gas oil, light petroleum gas and diesel directly consumed by Network Rail and reported against a 2006-07 baseline	Electricity – 431,040 MWh Gas – 50,192 MWh Gas oil – 659 cu m Petrol – 656 cu m Diesel – 22,956 cu m Calor gas – 46 tonnes Aviation fuel – 183 cu m
Tonnes of carbon dioxide equivalents (CO_2 (e))	**Non-Traction**	
	Tonnes CO_2 equivalents calculated for non-traction by applying the relevant conversion factors listed in Defra's greenhouse gas Company Reporting Guidelines to annual energy consumption data	Carbon footprint is 307,604 tCO_2 A reduction of 4.6 per cent versus 2006/07 baseline
	Freight traction	
	(data based on 2008/09 National Rail Trends Yearbook)	
	Diesel as grammes CO_2 per net freight tonne km	Diesel CO_2 – 28.3
	Electric as grammes CO_2 per net freight tonne km	Electric CO_2 – 2.5
	Passenger Traction	
	(Data based on 2008/09 data supplied by ATOC)	
	Diesel traction as grammes CO_2 per passenger km	Diesel traction – 26
	Passenger electric traction as grammes CO_2 per passenger km	Passenger electric traction – 28
	Employee Business Travel	
	Tonnes CO_2 equivalents calculated for employee business travel by applying the relevant conversion factors listed in Defra's greenhouse gas Company Reporting Guidelines	4,768 tCO_2 (e) including air travel and domestic rail and London taxi use
	Contractor Information	
	Tonnes CO_2 equivalents per £million spend calculated for contractor non traction energy use by applying the relevant conversion factors listed in Defra's greenhouse gas Company Reporting Guidelines	CO_2 (e) emissions from Network Rail's top 20 contractors were collected during 2009/10
	Baseline to be set	The average rate was 21.3 tCO_2 (e)/£m

Table 5.8: Environmental measures (continued)

Measure	*Definition*	*2009/10 Results*
Expenditure on sustainable materials	**Sustainably Sourced Wood**	
	Track timber expenditure based on the definition of Sustainably sourced wood as per the World Wildlife Fund – Forest Trade Network guidance, which includes: *Category 5 – Credibly certified Sources* *Category 4 – Progressing to certified sources* *Category 3 – Known licensed sources*	99.5 per cent of spend on track timber was on sustainable sourced wood, of which 87.5 per cent spend was on Category 5 – credibly certified sources (currently only FSC)
	Other sustainably sourced materials	
	Expenditure on sustainably sourced ballast, concrete sleepers, steel rail, oils and fuel oils, and paper will be available during CP4	Data on sustainably sourced paper will be collected during 2010/11
	Office furniture recycled or reused in tonnes	
		213 tonnes of office furniture was recycled or reused last year
Deployable Water	**Reuse of water**	
	Use of deployable water from dewatering the Mersey and Severn Tunnels	8,438,152 metres3 was used in 2009/10 which equates to 17.3 per cent of the total removed
	Water Use	
	Amount of water used by NR during the year	It is estimated we have used 49m3 of water per employee which is approximately the same as last year
Waste	**Non track waste**	
	Waste recovered, recycled or reused as a percentage of total produced	The total waste from managed stations, signalling centres, depots and corporate offices was 33,308 tonnes. 18.82 per cent of which was recovered, recycled or reused
	Network Rail Target – 60 per cent for that produced at managed stations, corporate offices and depots)	Reporting performance versus the target will begin in 2010/11
	National Delivery Service (NDS)	
	Waste recovered, recycled or re-used arising from renewals and enhancements, including track waste recovered or recycled by NR NDS Target 95 per cent by end CP4	Total waste managed was 1.48 million tonnes, versus 2.1 million tonnes last year 90.3 per cent has been reused/recycled or recovered versus 93.2 per cent last year. This reduction in rate is reportedly due to NDS handling much more mixed inert wastes. The disposal of these wastes has been to landfill but its use is understood to be predominantly for cover material. NDS is reviewing management processes in order to improve data capture and reporting
	Contractor Information	
	Waste recovered, recycled or re-used arising from renewals and enhancements, including track waste recovered or recycled by NR key contractors	Waste data was collected from Network Rail's top 18 contractors during 2009/10 Our top contractors reported the total waste as approximately 0.8 million tonnes, of which 56.97 per cent was reused/recycled or recovered We plan to work with our contractors to increase this to 80 per cent

Table 5.8: Environmental measures (continued)

Measure	*Definition*	*2009/10 Results*
Environmental incidents	**Incidents**	
	Number of reportable environmental incidents during the year, measured year on year against the baseline of 2005/06 when 139 total incidents and 6 reportable incidents occurred	Two incidents were reported in 2009/10 versus six in 2008/09. One of the incidents involved diesel loss from a train struck by high ballast. The other incident was in relation to a protected species habitat No incidents have resulting prosecutions, notice or enforcement action
	Graffiti	
	Number and per cent of graffiti sites identified during the year, cleaned during the year and the number of sites carried forward for cleaning to the following year	942 sites reported versus 892 in 2008/09. 25 remain open versus 20 in 2008/09. This equates to 99.9 per cent cleaned during the year and 0.03 per cent being carried over to 2010/11
Sites of Special Scientific Interest (SSSIs)	**SSSIs England**	
	The per cent of SSSIs in England classified as favourable or recovering condition Target of 95 per cent by 2010 set in conjunction with Natural England against 21 sites	79.9 per cent versus 49.2 per cent in 2003/04 of NR SSSIs are currently reporting a favourable/recovering rate NE is currently reporting an 82.1 per cent favourable/recovering rate against the 95 per cent 2010 target set on 21 SSSIs
	SSSIs Wales	**SSSIs Wales and Scotland**
	The per cent of SSSIs in Wales in favourable/recovering condition	Network Rail is working with the Countryside Council for Wales and Scottish Natural Heritage to carry out a similar assessment so that progress can be reported in future years
	SSSIs Scotland	
	The per cent of SSSIs in Scotland in favourable/recovering condition	
Environmental initiatives	Environmental initiatives, including performance against wider initiatives not specifically funded under PR08	Please see details in the text following this table

Environment initiatives

National pollution prevention programme

The work undertaken as part of the National Pollution Prevention Programme has concluded. During 2009/10, handback and close out procedures have been progressed which will continue into 2010/11 when full handback is achieved.

Automatic meter readers

The AMR project will install around 5,500 automatic meter readers for electric supplies. This will provide data to considerably improve consumption knowledge in order to facilitate decisions on the best options for reducing consumption and make it easier to report on our performance. This has added importance as Network Rail is a full participant in the Carbon Reduction Energy Efficiency Scheme which commenced on 1 April 2010.

Carbon reduction programme

The Carbon Reduction Strategy has produced energy action plans for 15 of our managed stations, the remaining three are the subject of major development work. Similar plans have been drawn up for six infrastructure maintenance depots and the Westwood national leadership centre near Coventry. Options for further development include improvements to building fabric, lighting, heating, cooling, ventilation, air tightness, control systems, monitoring and management. Business cases for investment in the various options are now being reviewed and our programme will be aligned with planned development so that we can time the implementation of the change to provide best economic benefit.

Sustainable lineside

The Sustainable Lineside project will identify biological planting solutions and management options to mitigate risks to the operational railway. For example, embankment and/or cutting stability, flytipping, trespassing and reducing or removing vegetation that is incompatible with running a safe railway. These solutions and management options aim to reduce the intensity of maintenance required and enhance the nature conservation value of the lineside environment, without increasing the risk to the operational railway.

During 2009/10, ten pilot sites with associated key risks were identified across the UK. Ecology assessments were carried out to identify the baseline nature conservation value of the sites and surrounding areas. In addition, supported by Network Rail's partnership with the Tree Council, Network Rail has gained external stakeholder engagement and identified volunteers for a Working Group who could provide specialist technical input in terms of design. Stakeholders from the University of Staffordshire, RSPB, the Countryside Council for Wales, and Campaign for Protection of Rural England expressed interest in forming a working group and the next phase of work is ongoing to develop the solutions in order to establish site trials during 2010/11. These solutions will be trialled and monitored on ten pilot sites across Britain over the period from 2010/11 to 2015/16, with reports of findings issued in 2015/16. If considered successful, these solutions and management options would be rolled out via a revised Biodiversity Action Plan and revised Engineering Standards (as appropriate).

These solutions and management options enable improvements to be made where Network Rail is planning to renew the lineside or carrying out enhancement works that could affect the lineside, thus helping to fulfil our Biodiversity Duty as introduced by the Natural Environment Research Council (NERC) in 2006. Additionally, we recognise the potential opportunity this brings for the railway to be used to create and trade habitat as an offset to development when proposed new legislation comes into force and we are tracking the legislation so that we can make this opportunity a reality.

Sites of special scientific interest

This project aims to bring twenty one Sites of Special Scientific Interest (SSSIs) in England to favourable or recovering status by the end of 2010, in support of the UK Government's Public Service Agreement. Natural England has reported that 82.1 per cent of the SSSIs owned and managed by Network Rail are now in favourable or recovering position, in comparison to 52.2 per cent of the Sites in 2008/09. This is due to the work undertaken through our SSSI Enhancement Project, working with the British Trust for Conservation Volunteers.

On train metering

At the moment operators of electric trains on the network are billed for their usage of electric power that we supply by way of modelled consumption rates. We are working on a new capability to allow train operators to use on train metering facilities to measure their trains' actual

usage of electricity, and be billed based on these metered figures. Moving to electricity bills that are based on actual rather than estimated consumption will create strong incentives for train operators to reduce their use of electric power by applying better train driving techniques and switching train equipment off when trains are stabled. On train metering should, therefore, contribute to the GB rail industry reducing its carbon footprint.

The first operator to opt to move to on train metering was Virgin Trains on the West Coast Main Line. Other operators will have an opportunity to opt in, from April 2011.

However, as electricity rates vary by time of day and geographically, there are considerable technical challenges to deliver this new capability. The project is on-going and is aiming to go live in late summer 2010.

Blackfriars photovoltaic scheme

The Blackfriars station redevelopment, due for completion in early 2012, is scheduled to be one of our first major projects to incorporate the large scale use of photovoltaic (PV) cells. It is intended that the PV cells will form part of the station roof design and supply up to 70 per cent of the station's electrical needs. Excess electricity will be fed back into the national grid.

Section 6 – Expenditure

Introduction

This section provides information on actual expenditure on operating, maintenance, renewals and enhancements during 2009/10 as compared to the CP4 Delivery Plan 2009. All financial figures are in 2009/10 prices and are consistent with expenditure data presented in the Regulatory Accounts.

Included within this section are tables and commentary related to:

- the network-wide total expenditure;
- disaggregated expenditure for England & Wales and Scotland;
- operating costs;
- maintenance costs by operating route; and
- renewal expenditure for each of the 26 strategic routes, plus central (other).

An assessment of the efficiencies we have achieved in the first year of CP4 is in Section 7 and the new Section 9 includes details of our enhancements expenditure.

Network total expenditure

Network total expenditure for operating costs, maintenance, renewal and enhancements is given in Table 6.1.

Table 6.1: Expenditure 2009/10 prices (£ million)

	Plan	***Actual***	***Variance***
Operating Expenditure			
Controllable	976	991	15
Non-Controllable	420	434	14
Total Operating Expenditure	**1,396**	**1,425**	**29**
Maintenance	**1,099**	**1,071**	**(28)**
Renewals			
Track	705	698	(7)
Signalling	446	411	(35)
Structures	375	353	(22)
Electrification	120	81	(39)
Plant and Machinery	141	89	(52)
Information Technology	120	88	(32)
Telecoms	327	232	(95)
Operational Property	274	229	(45)
Other	179	123	(56)
Total core renewals	**2,685**	**2,304**	**(381)**
Deferred renewals from 2008/09	211	included above	(211)
Total Renewals	**2,896**	**2,304**	**(592)**
Total Enhancements (PR08)	***1,370***	***1,050***	***(320)***
Non PR08 Enhancements	***563***	***541***	***(22)***
Total Enhancements	**1,933**	**1,591**	**(342)**

Commentary on renewals expenditure in 2009/10

Track
The variance is due to the net impact of reprioritisation of work between routes and for efficient delivery. Also delivery of some S&C efficiencies.

Signalling
The variance is due to a combination of efficiencies delivered (including South Erewash and Glasgow Central resignalling) and deferral of works whilst more efficient scope and delivery options are developed. This is partially offset by increased costs on Colchester–Clacton resignalling.

Structures
The variance is due to reprogramming of work and efficiencies as a result of better rates from contractors who have worked with us to drive costs down.

Electrification
The variance is due a number of schemes deferred including: GE OLE (£19 million), SCADA (£5 million), and various switchgear renewals (£6 million) including £1 million delay to gain bulk buying efficiencies. The remaining £10 million is deferrals across the portfolio including HV feeders.

Plant and Machinery
The variance is mainly due to deferred expenditure on the high output, ballast cleaner & support plant and the intelligent infrastructure programme. There is also some deferral of point heating and hot axle box detector renewals to obtain best value within existing and potential new contracts.

Information Technology
The variance is due to efficiencies, cancellations and re-phased works.

Telecoms (including FTN)
The majority of the underspend has arisen on the FTN/GSMR programme. In order to achieve an efficient delivery of the project, work has been deferred to allow for a change in delivery and contract strategy. In addition there have been delays in securing commercial agreements with TOCs/FOCs regarding cab fitment which has led to re-phasing of activity into later years of CP4. The extreme winter weather was also a factor.

Operational Property
The £45 million variance is due to a combination of factors including: delays and reprogramming of works at managed stations (£22 million), efficiencies across the portfolio through better than predicted prices from contractors and also through re-scoping works, mainly through the Franchised Stations asset (£11 million). The remaining is from re-programming of works at franchised stations and depots into future years to ensure future efficiencies.

Other
The variance in this category is largely due to deferrals of some projects until later in the control period, notably projects on the Efficient Engineering Access programme on the West Coast. In addition the Delivery Plan also included an allowance for contingency that was not utilised in the year.

Disaggregated expenditure in operating, maintenance, renewals and enhancements in England & Wales and Scotland is presented in Tables 6.2 and 6.3.

Table 6.2: England/ Wales Expenditure 2009/10 prices (£ million)			
	Plan	***Actual***	***Variance***
Operating Expenditure			
Controllable	886	896	10
Non-Controllable	388	402	14
Total Operating Expenditure	**1,274**	**1,298**	**24**
Maintenance	**1,006**	**979**	**(27)**
Renewals			
Track	641	636	(5)
Signalling	422	391	(31)
Structures	300	282	(18)
Electrification	116	80	(36)
Plant and Machinery	128	83	(45)
Information Technology	109	80	(29)
Telecoms	275	197	(78)
Operational Property	246	208	(38)
Other	163	121	(42)
Deferrals from 2008/09	211	included above	(211)
Total Renewals	**2,611**	**2,078**	**(533)**
Total Enhancements (PR08)	**1,155**	**877**	**(278)**

Table 6.3: Scotland Expenditure 2009/10 prices (£ million)			
	Plan	***Actual***	***Variance***
Operating Expenditure			
Controllable	90	95	5
Non-Controllable	31	32	1
Total Operating Expenditure	**122**	**127**	**5**
Maintenance	**94**	**92**	**(2)**
Renewals			
Track	64	62	(2)
Signalling	23	20	(3)
Structures	74	71	(3)
Electrification	4	1	(3)
Plant and Machinery	13	6	(7)
Information Technology	11	8	(3)
Telecoms	51	35	(16)
Operational Property	28	21	(7)
Other	16	2	(14)
Total Renewals	**285**	**226**	**(59)**
Total Enhancements (PR08)	**214**	**173**	**(41)**

Renewals budget variance analysis

The renewals budget variance analysis is used as the main method of understanding the variance between actual expenditure and budget. The commentary by asset is provided after the network summary table at the start of this section and as part of the route analysis tables at the end of this section. The new Cost Efficiency Measure has taken over as the best measure of efficiency measurement although the variance analysis does provide supporting data for it.

The annual budgets were set in line with the CP4 Delivery Plan. During the year changes in project budgets and actual expenditure, whether increases or savings, are classified according to whether they represent changes in unit costs or other activity efficiencies, changes in scope of works or deferral. These changes are summarised in the table. The scope changes as stated in previous years cover a range of factors, some of which reflect improvements in efficiency, but the interpretation of these changes is not always clear cut. Rescheduled activity is the net of unbudgeted rollover from previous years, work brought forward from later years in the plan, and work deferred to later years in the plan; this category of change is neutral on efficiency. The savings classified as activity efficiency feed into the unit cost efficiency part of the Cost Efficiency Measure.

Table 6.4: Renewals budget variance analysis 2009/10 prices (£ million)

Renewals	*Actual*	*Budget*	*Variance*	*Scope Change*	*Activity Efficiency*	*Rescheduled Activity*
Track	698	728	30	7	38	(15)
Structures	353	381	28	1	19	7
Signalling	411	482	70	3	(1)	68
Electrification	81	134	54	1	0	53
Information technology	88	120	32	4	8	20
Telecoms	233	345	113	0	10	103
Stations	181	230	49	5	4	39
Depots	29	52	23	0	2	21
Plant Machinery / Other	232	425	193	9	9	175
Total Renewals	**2,304**	**2,896**	**591**	**31**	**89**	**471**

Table 6.5: Per cent overspend or underspend against delivery plan

	Opex	*Maintenance*	*Renewals*	*Enhancements*
Network total	2%	(3%)	(20%)	(23%)
England & Wales	2%	(3%)	(20%)	(24%)
Scotland	4%	(2%)	(20%)	(19%)

Operating expenditure

A breakdown of operating expenditure for the network, England & Wales and Scotland is shown in Tables 6.6, 6.7 and 6.8.

Operations

Operations costs were in line with the Delivery Plan.

Support

Staff costs rose in the year. Average salaries across the company increased by 2.3 per cent. This absorbed the 3.5 per cent pay rise for non-management grades agreed in December 2008 on the basis of prevailing inflation in Autumn 2008. Additional costs were absorbed by freezing managerial salaries and by replacing leavers with internal promotion.

Non-controllable costs

Costs were in line with the Delivery Plan with the exception of British Transport Police. The amount in the Delivery Plan is the amount included in the ORR's final determination. This was an amount that Network Rail thought was unrealistic and so the budget was increased by £13 million. Therefore, the performance against budget was only £3 million adverse.

Table 6.6: Network total actual versus delivery plan for OPEX (£ million at 2009/10 prices)

	Plan	*Actual*	*Variance*
Controllable operating expenditure			
Operations	391	386	(5)
Support	586	605	19
Sub-total	**976**	**991**	**15**
Non-controllable			
EC4T	258	257	(1)
Cumulo rates	73	74	1
BT Police	60	76	16
Railway safety charge	8	8	0
ORR fee	20	19	(1)
Sub-total	**420**	**434**	**14**
Total OPEX	**1,396**	**1,425**	**29**

Table 6.7: England & Wales actual versus delivery plan for OPEX (£ million at 2009/10 prices)			
	Plan	***Actual***	***Variance***
Controllable operating expenditure			
Operations	356	351	(5)
Support	529	545	16
Sub-total	**886**	**896**	**10**
Non-controllable opex			
EC4T	243	243	0
Cumulo rates	65	66	1
BT Police	54	69	15
Railway safety charge	8	7	(1)
ORR fee	18	17	(1)
Sub-total	**388**	**402**	**14**
Total OPEX	**1,274**	**1,298**	**24**

Commentary

The reasons for the movements are in line with the Great Britain position.

Table 6.8: Scotland actual versus delivery plan for OPEX (£ million at 2009/10 prices)			
	Plan	***Actual***	***Variance***
Controllable operating expenditure			
Operations	34	35	1
Support	56	60	4
Total	**90**	**95**	**5**
Non-controllable opex			
EC4T	14	14	0
Cumulo rates	8	8	0
BT Police	6	7	1
Railway safety charge	1	1	0
ORR fee	2	2	0
Total	**31**	**32**	**1**
Total OPEX	**122**	**127**	**5**

Commentary

Scotland support costs were affected by the additional insurance costs arising from worse train performance compared to Great Britain as a whole. This was largely due to the severe weather experienced in January and February.

Maintenance expenditure

A breakdown of maintenance expenditure is shown in Table 6.9.

Commentary

This year saw a good performance in maintenance where costs were reduced by seven per cent (or £86 million) on a like for like basis through a combination of tight cost management, control of headcount, productivity improvements and reductions in waste. Improved management controls led to a reduction in overtime costs and a reduction in the use of labour subcontractors for core work, saving £21 million. We have invested in training over recent years and in 2009/10 we have utilised the increased skills of our employees to carry out tasks previously carried out by contractors. We are dedicated to reducing waste. For example, our fleet management team have achieved a significant reduction in vehicle numbers, by 10 per cent, which will lead to financial savings of over £10 million.

In the next 12 months we will continue to utilise improved techniques and technology to ensure we can achieve the necessary reductions in costs and continue to improve the safety of the railway for our employees and the general public.

Table 6.9: Maintenance Expenditure at 2009/10 prices (£ million)

	Budget	*Actual*	*Variance*
Route delivered maintenance function			
London North Eastern	123	120	(3)
Midland and Continental	42	41	(1)
London North Western	235	221	(14)
Anglia	81	78	(3)
Kent	55	54	(1)
Sussex	41	40	(1)
Wessex	65	62	(3)
Western	113	110	(3)
England and Wales	754	726	(28)
Scotland	68	67	(1)
Other maintenance function	95	99	4
Total Route delivered maintenance function	**917**	**892**	**(25)**
Other Maintenance*	***182***	***179***	***(3)***
Total Maintenance Expenditure	**1,099**	**1,071**	**(28)**

Note: *Includes structures examinations, major items of maintenance plant such as rail grinding and the measurement train, and other HQ managed maintenance activities

Table 6.10: Maintenance expenditure by activity (£ million at 2009/10 prices)

	Plan	*Actual*
Track	–	464
Structures	–	33
Signalling	–	168
Telecoms	–	65
Electrification	–	46
Plant and machinery	–	38
Other	–	49
Sub-total	–	863
Indirect costs	–	103
Other costs	–	105
Total	**1,099**	**1,071**

Route 1 Kent

Table 6.11: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	27.2	30.9	3.7
Signalling	22.5	19.2	-3.3
Structures	11.2	11.5	0.2
Electrification	13.2	13.6	0.4
Plant and Machinery	1.3	2.3	1.0
Telecoms	7.4	7.5	0.2
Operational Property	45.3	35.5	-9.8
Total Renewals	**128.1**	**120.5**	**-7.6**

Track

This variance is due to additional reactive renewals and unbudgeted contractor costs.

Signalling

The £3.3 million variance is mainly due to deferral of works at East Kent re-signalling.

Structures

No significant variance.

Electrification

No significant variance.

Plant and machinery

The £1.0 million variance is due to increased costs on point heating renewals and additional minor works.

Telecoms

No significant variance.

Operational property

This variance is due to London Victoria roof renewal delays in obtaining Listed Buildings Consent leading to £3.6 million slippage; also at London Victoria, a further £1.9 million works including water catchment repairs were re-programmed to align with future platform works to be progressed once roof works are complete. Further investigation of works required at London Charing Cross led to change in prioritisation of works out of 2009/10 into future years, totalling £1.1 million. Works at London Bridge were also re-prioritised in line with Thameslink programme, £1.0 million.

Route 2 Brighton Main Line

Table 6.12: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	24.4	29.6	5.1
Signalling	5.4	5.1	-0.4
Structures	25.7	22.5	-3.2
Electrification	7.1	6.4	-0.7
Plant and Machinery	2.0	0.8	-1.2
Telecoms	1.5	1.0	-0.5
Operational Property	14.2	16.4	2.2
Total Renewals	**80.4**	**81.8**	**1.4**

Track

This variance is due to additional reactive renewals and extra work, e.g. Southerham Glynde.

Signalling

No significant variance.

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead. Additional work completed on Four Span in 2008/09, reducing the 2009/10 spend by (-£0.6 million), Drainage – Folkington slipped (-£0.8 million) to 2010/11 due to late option selection by Network Rail.

Electrification

No significant variance.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

The £0.5 million variance is mainly due to deferral of works on Victoria Signalling Centre concentrator.

Operational Property

The variance is due to schemes at Purley Station, £0.9 million increase in cost to the canopy repairs, and urgent works introduced to repair the platforms, £0.4 million. Costs also increased above forecast at Gipsy Hill Station on replacement of a timber footbridge, £0.6 million. At West Croydon, platform repairs were required that had not been included within the forecast, £0.4 million.

Route 3 South West Main Line

Table 6.13: Route Expenditure in 2009/10 prices (£ million)

Renewals	*Forecast*	*Actual*	*Variance*
Track	39.3	43.7	4.4
Signalling	30.9	27.6	-3.3
Structures	15.2	14.1	-1.1
Electrification	15.5	13.4	-2.1
Plant and Machinery	3.5	0.2	-3.3
Telecoms	5.0	4.5	-0.5
Operational Property	19.3	19.5	0.2
Total Renewals	**128.7**	**122.9**	**-5.8**

Track

This variance is due to additional reactive renewals and unbudgeted job costs e.g. Portsmouth.

Signalling

The £3.3 million variance is mainly due to deferral of works at Southampton Mount Pleasant to achieve efficiencies.

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead (£2 million). Additionally Bincombe emergency added (£0.6 million).

Electrification

The £2.1million variance is due to slippage on JB24 switchgear renewals (£0.9m) due to delays in the manufacture of the Outdoor Switchgear modules and deferral of works on HV feeder renewals, DC Switchgear renewals and Earthing renewals.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

The £0.5 million variance is mainly due to deferral of work on various projects including Eastleigh concentrator renewal and ECR Branching Panels.

Operational Property

This variance is due to works at Liphook and Liss stations costing more than initially budgeted, £0.3 million.

Route 4 Wessex

Table 6.14: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	7.9	6.6	-1.4
Signalling	4.1	2.6	-1.6
Structures	1.4	7.5	6.0
Electrification	1.2	0.0	-1.2
Plant and Machinery	0.6	0.1	-0.5
Telecoms	0.3	0.0	-0.3
Operational Property	2.0	2.5	0.5
Total Renewals	**17.6**	**19.2**	**1.5**

Track

This variance is due to efficient delivery e.g. Wimbledon S&C.

Signalling

The £1.6 million variance is mainly due to deferral of works for Alton Line re-signalling, partially offset by accelerated minor works.

Structures

Additional Minor Works schemes completed in year which were not included in the baseline budget allocation (£1.4 million), also additional project completed at Seaton Junction (£2.5 million). Additional brickwork repair completed at Moxton (£0.5 million).

Electrification

This variance is due to deferral of various DC distribution renewals.

Plant and Machinery

No significant variance.

Telecoms

No significant variance.

Operational Property

This variance is largely due to introduction of schemes at Sherbourne (canopy repairs £0.1 million), Strawberry Hill (footbridge refurbishment £0.2 million) and Yetminster (car park £0.2 million).

Route 5 West Anglia

Table 6.15: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	23.1	24.7	1.6
Signalling	13.5	12.9	-0.7
Structures	4.7	3.7	-1.0
Electrification	1.7	2.1	0.4
Plant and Machinery	0.8	0.0	-0.8
Telecoms	0.9	0.4	-0.5
Operational Property	6.4	6.3	-0.1
Total Renewals	**51.0**	**50.1**	**-0.9**

Track

This variance is due to unbudgeted costs at Croxton Level Crossing.

Signalling

The £0.7 million variance is mainly due to deferral of Treadle Modifications West Anglia / Great Eastern and Kings Lynn / Kennett signalling renewals.

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead (£0.8 million).

Electrification

No significant variance.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

No significant variance.

Operational Property

No significant variance.

Route 6 North London Line and Thameside

Table 6.16: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	19.9	19.7	-0.2
Signalling	2.3	1.3	-1.0
Structures	7.7	9.1	1.4
Electrification	1.2	1.6	0.4
Plant and Machinery	0.4	0.1	-0.4
Telecoms	0.3	0.1	-0.2
Operational Property	6.1	4.6	-1.5
Total Renewals	**37.8**	**36.3**	**-1.4**

Track

No significant variance.

Signalling

The £1.0 million variance is due to deferral of minor works.

Structures

Additional scheme added for Intersection bridge, (£1.3 million) for brick work repair.

Electrification

No significant variance.

Plant and Machinery

No significant variance.

Telecoms

No significant variance.

Operational Property

Variance includes removal of works at Caledonia Road and Dalston King stations, to be undertaken and funded by the SFO under their major modernisation plan, £0.7 million. Also, works at Camden Road, to be delivered by the SFO, have been slipped into future years to ensure efficiencies can be maximised, £0.2 million.

Works to heating systems at East Ham LMD were postponed as the works would have been completed in winter months, with no alternative heating available, £0.6 million.

Route 7 Great Eastern

Table 6.17: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	25.9	24.2	-1.7
Signalling	16.7	26.6	9.9
Structures	15.4	18.7	3.3
Electrification	41.4	19.6	-21.8
Plant and Machinery	2.1	0.7	-1.4
Telecoms	1.6	0.8	-0.8
Operational Property	7.9	6.8	-1.1
Total Renewals	**111.0**	**97.5**	**-13.6**

Track

This variance is due to Ipswich depot efficiencies.

Signalling

The £9.9 million variance is due to increased costs arising on Colchester-Clacton re-signalling partially offset by deferral of minor works.

Structures

Additional spend at Victoria Road Bridge (£1.2 million) based on optioneering estimates over original budget. River Itchen included in route 3 in baseline budget (£1 million). Upwey Embankment scheme added in 2009/10 (£1.2 million).

Electrification

The £21.8 million variance is mainly due to deferral of works on Great Eastern Overhead Line renewals.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

No significant variance.

Operational Property

Main variance was due to removal of a scheme to repair platforms at Gidea Park station, £0.6 million, as the works were no longer required. This was due to be substituted with replacement of the footbridge at the same station, however, future works to be undertaken by the Access for All programme will provide a DDA compliant structure.

Route 8 East Coast Main Line

Table 6.18: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	40.4	39.9	-0.5
Signalling	12.6	11.5	-1.1
Structures	14.2	14.4	0.1
Electrification	6.1	1.9	-4.2
Plant and Machinery	3.6	2.4	-1.2
Telecoms	4.2	2.6	-1.6
Operational Property	8.9	7.5	-1.4
Total Renewals	**90.0**	**80.2**	**-9.9**

Track

No significant variance.

Signalling

The £1.1 million variance is due to delivery of efficiencies on a number of projects.

Structures

No significant variance.

Electrification

This variance is due to deferral of various distribution equipment and overhead line renewals.

Plant and Machinery

The £1.2 million variance is mainly due to deferral of LNE domestic wiring renewals.

Telecoms

The £1.6 million variance is due to deferral of works on Northern City Line and DOO CCTV.

Operational Property

Scheduled platform repairs at Alexandra Palace were deferred by a year due to lack of possessions in 2009/10, £1.6million. This was offset by works at Newark Northgate to repair canopies, £0.4 million, and Palmers Green design of platform repairs, £0.2 million, which were accelerated from future years. Operational Property also contributed £0.1 million to signalling re-position at Heaton LMD.

Route 9 North East Routes

Table 6.19: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	10.4	10.0	-0.4
Signalling	11.6	13.4	1.8
Structures	11.9	10.6	-1.3
Electrification	0.1	0.1	0.0
Plant and Machinery	0.2	0.2	0.0
Telecoms	1.0	0.6	-0.4
Operational Property	4.0	4.0	0.0
Total Renewals	**39.1**	**38.9**	**-0.3**

Track
No significant variance.

Signalling
The £1.8 million variance is due to accelerated works on Durham Coast Stranton to Hall Dene project and minor works.

Structures
This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead, (£2 million). Additional scheme completed in 2009/10 Danby Lodge Farm to prevent TSR (£0.6 million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Information Technology

Telecoms
No significant variance.

Route 10 North Cross-Pennine, North and West Yorks

Table 6.20: Route Expenditure in 2009/10 prices (£ million)

Renewals	*Forecast*	*Actual*	*Variance*
Track	15.8	17.3	1.5
Signalling	10.9	9.9	-1.0
Structures	21.7	14.4	-7.3
Electrification	0.1	0.0	-0.1
Plant and Machinery	1.7	0.2	-1.5
Telecoms	2.4	1.7	-0.6
Operational Property	8.5	7.7	-0.8
Total Renewals	**61.1**	**51.3**	**-9.8**

Track

This variance is due to depot overspends across a number of sites.

Signalling

The £1.0 million variance is mainly due to deferral of Selby Swing Bridge gate box renewals in order to develop a more efficient project.

Structures

The £7.3 million variance is largely due to an over allocation of budget covering Minor Works, Possession/Isolation/Signal Box Openings and Project Management Overhead (£6 million). Additional scheme completed at Winfield Hook to prevent further deterioration of embankment (£0.9 million), and increased scope at Reading Road Bridge (£0.5 million).

Electrification

No significant variance.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

No significant variance.

Operational Property

Hull Botantic LMD Carriage Washer was re-prioritised to future years to enable a review of contracting strategy for all Carriage Washers, to create efficiencies nationally, £0.3 million. Variance also includes Halifax Canopy repairs which started early (in 2008/09), drawing £0.2 million from 2009/10 budget.

Route 11 South Cross-Pennine, South Yorkshire and Lincolnshire

Table 6.21: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	53.0	52.7	-0.3
Signalling	16.7	15.2	-1.5
Structures	24.3	17.3	-7.0
Electrification	0.0	0.0	0.0
Plant and Machinery	1.3	0.9	-0.4
Telecoms	1.8	1.0	-0.8
Operational Property	3.4	4.0	0.6
Total Renewals	**100.5**	**91.1**	**-9.4**

Track

No significant variance.

Signalling

The £1.5 million variance is mainly due to deferral of works at Immingham East Junction renewals (£0.5 million), Scunthorpe Westlock renewals (£0.3 million) and Moorthorpe resignalling (£0.2 million).

Structures

The £7 million variance is largely due to an over allocation of budget covering Minor Works, Possession/Isolation/Signal Box Openings and Project Management Overhead (£5 million). Butterthwaite Lane slipped to 2010/11 with the possibility of down grading bridge capacity (£1 million). Medge Hall budget reduced for 2009/10 (£2 million) due to scope efficiency through using a reduced pilled diameter solution.

Electrification

No significant variance.

Plant and Machinery

No significant variance.

Telecoms

No significant variance.

Operational Property

The £0.6 million variance is mainly due to works undertaken at Moorthorpe Station to improve rain water drainage and to repair uneven surfaces in car park.

Route 12 Reading to Penzance

Table 6.22: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	32.2	27.3	-4.9
Signalling	7.1	5.4	-1.7
Structures	23.8	16.7	-7.2
Electrification	0.0	0.0	0.0
Plant and Machinery	1.1	0.3	-0.8
Telecoms	0.8	0.3	-0.5
Operational Property	7.8	6.7	-1.1
Total Renewals	**72.7**	**56.6**	**-16.1**

Track

This variance is caused by work lost due to High Output derailment e.g. Thingley, Chippenham, Long Ashton.

Signalling

The £1.7 million variance is mainly due to deferral of works at Colthrop & Kintbury level crossings (£0.5 million), Devon 5 level crossing renewals (£0.4 million) and Exeter train describer renewals (£0.2 million).

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead (£4.5 million). In addition Barnard's Lock scheme slipped to 2010/11 (£1.1 million) as a result of missing possession in January 2010 due to further design work being required. Additional work brought forward from 2009/10 to 2008/9 for Dawlish Sea Wall (£1.6 million).

Electrification

No significant variance.

Plant and Machinery

This variance is due to deferral of various fixed plant renewals.

Telecoms

No significant variance.

Operational Property

Main variance due to delay in replacing St. Austell footbridge, largely due to lack of funding from other parties to complete the works, £0.6million. Footbridge repairs at Dawlish station were also re-prioritised into future years, pending review of options with external stakeholders, £0.5 million. Various other changes to works at specific stations were substituted with other schemes in year.

Route 13 Great Western Main Line

Table 6.23: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	90.2	79.3	-10.9
Signalling	83.5	97.3	13.8
Structures	21.6	16.0	-5.6
Electrification	0.1	0.0	-0.1
Plant and Machinery	1.7	0.9	-0.8
Telecoms	5.6	4.5	-1.0
Operational Property	43.9	26.8	-17.1
Total Renewals	**246.5**	**224.9**	**-21.7**

Track

This variance is due to modular S&C efficiencies (e.g. Oxford North, Thingley), deferrals (e.g. Hanwell, Worle), work lost due to High Output derailment (e.g. Wotton Bassett) and efficiencies from final account settlements.

Signalling

The £13.8 million variance is mainly due to acceleration of works on Newport Area Signalling Renewal.

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead (£7.5 million). In addition a Sapperton Tunnel scheme was delivered for less (£1 million), due a change in the work programme allowing for one large possession rather than 4 smaller ones. Nant Pibwr was allocated to route 14 in base line data (£0.6 million).

Electrification

No significant variance.

Plant and Machinery

The £0.8m variance is due to deferral of works on Sudbrook ventilation fan refurbishment and other minor works.

Telecoms

The £1.0 million variance is due to deferral of works and efficiencies delivered on FGW SISS works.

Operational Property

Major variances were contributed to by delays in works at Paddington station; roof renewal of Span 4 was delayed resulting in £5.4million slipping into future years; Standby Generator was initialled delayed then moved into future years to enable changes in requirements to be fully investigated, £2.0 million; further £2.3 million provision for minor works and development of future schemes was deferred to enable review of requirements beyond the roof and standby generator.

Schemes at Swansea Landore LMD also contributed to underspend in 2009/10; initial delay caused by on-going discussions with FGW over the future of the depot meant delay to start of roof repairs, £2.4 million, but contracting strategy contributed £0.6 million saving. On review of national funding for plant in depots, Swansea Landore Carriage Wash plant was deferred until later in CP4, £1.0 million.

Route 14 South and Central Wales and Borders

Table 6.24: Route Expenditure in 2009/10 prices (£ million)

Renewals	*Forecast*	*Actual*	*Variance*
Track	12.9	14.2	1.3
Signalling	13.3	15.8	2.5
Structures	9.0	10.1	1.1
Electrification	0.0	0.1	0.1
Plant and Machinery	1.3	0.3	-1.0
Telecoms	3.5	2.7	-0.8
Operational Property	6.1	4.9	-1.2
Total Renewals	**46.0**	**47.9**	**1.9**

Track
No significant variance.

Signalling
No significant variance.

Structures
Nant Pibwr was allocated to route 13 in base line data, but actual expenditure is included in this route (£0.6 million). Also additional work steel work repairs completed at Carmathen viaduct (£0.8 million).

Electrification
No significant variance.

Plant and Machinery
This variance is due to deferral of various fixed plant renewals.

Telecoms
The £0.8 million variance is mainly due to efficiencies in Arriva Territory telecoms renewals.

Operational Property
Variances in the main are due to contractor delay in delivering re-wiring works at Hereford Station, £0.5 million, and change in scope for footbridge repairs at Whitchurch, where due to high cost of the proposed repairs, £0.5 million, and the non-listed status, it is more cost efficient to replace the footbridge, which will be done in 2010/11.

Route 15 South Wales Valleys

Table 6.25: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	20.5	18.1	-2.3
Signalling	2.0	1.2	-0.8
Structures	0.1	2.9	2.8
Electrification	0.0	0.0	0.0
Plant and Machinery	0.0	0.0	0.0
Telecoms	0.3	0.0	-0.3
Operational Property	2.9	2.9	0.0
Total Renewals	**25.7**	**25.1**	**-0.6**

Track
This variance is due to loss of jobs due to High Output derailment and efficiencies from final account settlements.

Signalling
No significant variance.

Structures
Additional scheme completed at Pen-Y-Cae due to an emergency slip (£0.9 million), and additional minor works completed (£1million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
No significant variance.

Operational Property
Major variance was funding of Cardiff Canton LMD roof access walkway, £0.4 million, which was required due to scheme not having been completed in CP3.

Route 16 Chilterns

Table 6.26: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	0.6	0.7	0.0
Signalling	0.0	0.0	0.0
Structures	0.2	1.8	1.6
Electrification	0.0	0.0	0.0
Plant and Machinery	0.0	0.0	0.0
Telecoms	0.2	0.0	-0.2
Operational Property	6.0	1.3	-4.7
Total Renewals	**7.0**	**3.7**	**-3.3**

Track
No significant variance.

Signalling
No significant variance.

Structures
This variance is largely due to additional Minor Works being completed (£1.5 million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
No significant variance.

Operational Property
Main variance due to deferral of Roof Repair works at London Marylebone £4.9 million; Following discussions with Chiltern Railways, it was agreed that more efficient engineering access is available during April 2010 for the erection of the crash deck – this will lead to greater efficiencies for the overall implementation of the Project. Undertaking the implementation within the amended timeframe will also reduce the “weather risk” during the period when the existing roof is removed.

Route 17 West Midlands

Table 6.27: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	52.5	47.5	-5.0
Signalling	40.2	34.8	-5.3
Structures	9.8	10.0	0.2
Electrification	1.0	0.6	-0.4
Plant and Machinery	0.3	0.1	-0.2
Telecoms	3.6	1.0	-2.6
Operational Property	10.2	9.0	-1.2
Total Renewals	**117.6**	**103.0**	**-14.5**

Track

This variance is due to deferral for engineering priority (e.g. DCL £3.0 million), slippage at Kingsbury (£0.8 million) and efficiencies from final account settlements.

Signalling

The £5.3 million variance is mainly due to the deferral of Wolverhampton resignalling.

Structures

No significant variance.

Electrification

No significant variance.

Plant and Machinery

No significant variance.

Telecoms

The £2.6 million variance is due to efficiencies delivered on LNW concentrator renewals and deferral of works on LNW retail CIS, Birmingham New Street CIS/PA/VA and Stourbridge concentrator renewal.

Operational Property

Footbridge repairs at Sutton Coalfield Station re-programmed for delivery in 2010/11 to align with Access for All project and revised scope to provide new footbridge, £0.8 million.

Route 18 West Coast Main Line

Table 6.28: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	38.3	39.3	1.0
Signalling	21.3	6.4	-14.9
Structures	17.4	17.4	0.0
Electrification	9.6	4.2	-5.4
Plant and Machinery	3.7	0.3	-3.4
Telecoms	2.6	1.1	-1.5
Operational Property	12.8	12.5	-0.3
Total Renewals	**105.7**	**81.2**	**-24.5**

Track
No significant variance.

Signalling
The £14.9 million variance is due to deferral of various projects including Northampton resignalling and Warrington Preston Carlisle renewals whilst more efficient method of delivery is determined.

Structures
No significant variance.

Electrification
The £5.4 million variance is due to deferral of works on 3ph HV Switchgear due to supplier resource issues, JB424 Switchgear renewals and SCADA renewals.

Plant and Machinery
No significant variance.

Telecoms
The £1.5 million variance is due to deferral of works on Willesden and Rugby transmission renewals and Bletchley SISS renewal.

Operational Property
No significant variance.

Route 19 Midlands Main Line and East Midlands

Table 6.29: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	63.3	63.3	0.0
Signalling	62.0	50.0	-12.0
Structures	9.3	9.9	0.6
Electrification	1.4	1.2	-0.2
Plant and Machinery	0.6	0.0	-0.6
Telecoms	4.5	3.8	-0.6
Operational Property	5.8	5.4	-0.4
Total Renewals	**146.8**	**133.6**	**-13.2**

Track
No significant variance.

Signalling
The £12.0 million variance is due to efficiencies delivered on South Erewash and Tapton signalling renewals and deferral of works on Nottingham re-signalling.

Structures
Drainage – Folkington (£0.7 million) completed, but allocated to Route 2 in the baseline.

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
No significant variance.

Operational Property
No significant variance.

Route 20 North West Urban

Table 6.30: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	25.2	26.2	1.0
Signalling	6.8	6.7	0.0
Structures	20.4	16.4	-4.0
Electrification	1.6	1.1	-0.5
Plant and Machinery	0.4	0.1	-0.3
Telecoms	2.2	1.8	-0.5
Operational Property	13.8	14.2	0.4
Total Renewals	**70.5**	**66.6**	**-3.9**

Track
No significant variance.

Signalling
No significant variance.

Structures
This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/ Signal Box Openings and Project Management Overhead (£2 million). Additionally Mottram Viaduct has slipped into 2010/11 due to delays to initial designs (£1.8 million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
The £0.5 million variance is due to efficiencies on Clitheroe LLPA and Preston-Colne renewals.

Operational Property
Platform repairs at Poulton-le-Fylde were bought forward from future years, £1.8 million, due to possession availability, which also enabled early completion of works at Earlestown, £0.7million. This was offset by Carriage Washers at Blackpool North and Newton Heath LMDs being re-prioritised to future years to enable a review of contracting strategy for all Carriage Washers, to create efficiencies nationally, £1.0 million. Also, delay in design works caused works at Rainhill and Kirkham & Wesham stations, £0.3 million and £0.2 million respectively.

Route 21 Merseyrail

Table 6.31: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	5.7	5.0	-0.7
Signalling	0.7	0.0	-0.7
Structures	1.4	1.3	-0.1
Electrification	2.0	1.0	-1.0
Plant and Machinery	1.1	0.2	-0.9
Telecoms	1.2	0.7	-0.5
Operational Property	5.9	4.1	-1.8
Total Renewals	**18.1**	**12.4**	**-5.7**

Track
No significant variance.

Signalling
No significant variance.

Structures
No significant variance.

Electrification
The £1.0 million variance is mainly due to deferral of conductor rail renewal and DC electrification traction renewals.

Plant and Machinery
This variance is due to deferral of various fixed plant renewals.

Telecoms
The £0.5 million variance is mainly due to deferral of works on LNW Telecoms retail control equipment renewals.

Operational Property
Main variance caused by design for Liverpool Central Underground platform and tunnel linings scheme being delayed, £1.3 million. Scheme will now be delivered later in CP4.

Repairs to MDUs at Garsdale and Holyhead were postponed pending review of MDUs nationally post Maintenance Re-organisation, £0.4 million.

Route 22 North Wales and Borders

Table 6.32: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	4.6	4.1	-0.5
Signalling	2.1	1.6	-0.5
Structures	6.7	4.2	-2.5
Electrification	0.0	0.0	0.0
Plant and Machinery	0.2	0.0	-0.2
Telecoms	0.3	0.0	-0.3
Operational Property	2.6	2.8	0.2
Total Renewals	**16.6**	**12.7**	**-3.9**

Track
No significant variance.

Signalling
The £0.5 million variance is mainly due to deferral of Glan Conwy level crossing renewal.

Structures
This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/ Signal Box Openings and Project Management Overhead (£1 million). Additionally Yews Lane slipped to 2010/11 due cancelled Track lead possession (£0.8 million). Saltney Bridge achieved scope efficiency after tender returns (£0.5 million). Penmaenmawr included in baseline data due to admin error, (£0.5 million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
No significant variance.

Operational Property
No significant variance.

Route 23 North West Rural

Table 6.33: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	19.7	19.1	-0.6
Signalling	5.2	4.9	-0.3
Structures	10.0	14.5	4.5
Electrification	0.0	0.0	0.0
Plant and Machinery	0.3	0.0	-0.3
Telecoms	0.6	0.1	-0.5
Operational Property	2.9	3.2	0.3
Total Renewals	**38.7**	**41.8**	**3.1**

Track
No significant variance.

Signalling
No significant variance.

Structures
Additional scheme at Kirby Thore overbridge to remove PSR (£4 million).

Electrification
No significant variance.

Plant and Machinery
No significant variance.

Telecoms
No significant variance.

Operational Property
No significant variance.

Route 24 East of Scotland

Table 6.34: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	27.2	27.9	0.8
Signalling	5.9	5.1	-0.8
Structures	64.8	53.1	-11.7
Electrification	0.1	0.0	-0.1
Plant and Machinery	1.7	0.7	-1.0
Telecoms	1.4	1.1	-0.3
Operational Property	12.8	8.5	-4.3
Total Renewals	**113.7**	**96.4**	**-17.3**

Track

The variance is due to 3 additional sites and 3 sites where additional work was required.

Signalling

The £0.8 million variance is mainly due to deferral of works on Stirling North to Dunblane minor renewals.

The scope of the Stirling North to Dunblane Minor Renewals project was reviewed to ensure that our proposals for the renewals work would align comfortably with the planned electrification of the line to Dunblane. There were also discussions with Stirling Council regarding the future of the Cornton AHB and whether or not the crossing was earmarked for closure in the future. These two items contributed to the delay to the development of this scheme.

Structures

This variance is largely due to an over allocation of budget covering Minor Works, Possession/ Isolation/Signal Box Openings and Project Management Overhead (£11 million). Drainage Bishopbriggs slipped to 2010/11 due to possession problems (£0.5 million). Boghall Burn brought forward to 2009/10 to make use of disruptive possessions (£0.6 million).

Electrification

No significant variance.

Plant and Machinery

The variance is due to deferral of various fixed plant renewals, i.e 650V feeders, FSPs, Forth Bridge lighting and the Non Traction HV Transformers. Spend profile has been re-aligned within the CP4 business plan.

Telecoms

No significant variance.

Operational Property

Variance due to change in programme and strategy for Edinburgh Waverley scheme causing slippage of works into future years, £3.0 million. Broughty Ferry £0.9 million, Haymarket Pit Walls £0.286 million and Haymarket Luib Oil £0.271 million.

Works have now been split into 4 packages to ensure efficiencies can be made in the overall programme.

Route 25 Highlands

Table 6.35: Route Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	6.0	7.3	1.3
Signalling	2.5	0.9	-1.5
Structures	15.2	13.8	-1.3
Electrification	0.0	0.0	0.0
Plant and Machinery	0.2	0.0	-0.2
Telecoms	2.0	2.1	0.0
Operational Property	3.3	2.9	-0.4
Total Renewals	**29.1**	**27.0**	**-2.1**

Track

This variance is mainly due to additional new jobs to maximise engineering efficiency e.g. Stenton, Huntley and work done to avoid TSRs.

Signalling

The original scope for the Annat East/ West renewal was reviewed to ensure that the project represented value for money on a rural route. The time taken to review the scope and to re-price the project led to a delay.

Structures

This variance is due to Tarmore Road slipped to 2010/11 due to additional scope required, discovered after ground investigation was completed (£0.6 million). Tulloch viaduct scheme slipped to 2010/11 to make use of possessions (£0.6 million).

Electrification

No significant variance.

Plant and Machinery

The variance is due to deferral of various fixed plant renewals, i.e. the level crossing lighting spend profile has been re-aligned within the CP4 business plan and yard lighting and points heating surveys have confirmed the asset condition does not require renewal in CP4.

Telecoms

No significant variance.

Operational Property

No significant variance.

Route 26 Strathclyde and South West Scotland

Table 6.36: Route Expenditure in 2009/10 prices (£ million)

Renewals	*Forecast*	*Actual*	*Variance*
Track	18.9	17.9	-1.0
Signalling	18.8	7.4	-11.4
Structures	11.6	14.8	3.2
Electrification	3.2	1.2	-2.0
Plant and Machinery	1.0	0.0	-1.0
Telecoms	4.0	4.1	0.1
Operational Property	11.0	8.6	-2.4
Total Renewals	**68.5**	**54.0**	**-14.4**

Track

This variance is due to deferral to improve efficiency of delivery e.g. Killoch, Dumfries.

Signalling

The Glasgow Central project released contingency (£3 million) due to efficient delivery and transferred £2.5 million of scope into the automatic route setting project. The scope and timing of the Dumfries Lineside Renewals was reviewed to ensure synergies with the planned S&C renewal at Dumfries.

Structures

Additional scope required at Wath Burn (£1 million) in order to support a wider embankment. Due to problems with spandrels/ parapets an additional scheme was added at Crawick Viaduct (£0.6 million) and additional works were required at Enterkin Viaduct due to subsidence (£1 million). An emergency bridge rebuild at Stewarton Rd (£0.6 million) was required.

Electrification

The variance is due to deferral of various electrification renewals, i.e. the boosters transformers spend profile has been re-aligned within the CP4 business plan and station earthing. Grid supply point transformers and the 25KV bare feeders surveys have confirmed the asset condition does not require renewal in CP4.

Plant and Machinery

The variance is due to deferral of various fixed plant renewals, i.e. points heating, pumps stations, small station supplies and the tunnel lighting spend profile has been re-aligned within the CP4 business plan.

Telecoms

The renewal of Glasgow Queen Street PA has been deferred due to asset condition (£155K reduction).

Operational Property

Issues in securing land have delayed the commencement of works to build a new station at Gourock, £2.0 million. This scheme has been re-programmed for future years.

Central (Other)

Table 6.37: Expenditure in 2009/10 prices (£ million)			
Renewals	***Forecast***	***Actual***	***Variance***
Track	0.0	1.2	1.2
Signalling	27.5	28.6	1.1
Structures	0.0	6.8	6.8
Electrification	13.3	12.5	-0.8
Plant and Machinery	109.7	78.6	-31.1
Information Technology	120.0	87.6	-32.4
Telecoms	268.5	189.0	-79.5
Operational Property	0.0	0.0	0.0
Other	179.0	123.0	-56.0
Total Renewals	**718.0**	**527.3**	**-190.7**

Table 6.38: Expenditure in 2009/10 prices (£ million)			
Central Specific Projects	***Forecast***	***Actual***	***Variance***
Renewals			
FTN/GSM-R	268.5	189	-79.5
Other renewals			
Corporate offices	25.8	23.0	-2.8
EEA / WC	68.4	42.7	-25.7
Other renewals	84.8	57.3	-27.5
Total	179.0	123.0	-56.0

Track
This variance is due to non-route specific reallocation of indirect cost.

Signalling
No significant variance.

Structures
The Central spend relates to central engineering charges which have not been allocated out to projects/routes and the isolation charges which have also not been allocated to projects/routes.

Electrification
No significant variance.

Plant and Machinery
The £31 million variance is HABDs (£6.5 million of planned slippage): slippage on programme managed by Enhancements due to a re-programme into 10/11 to ensure best value within existing and potential new contractors, along with the reprioritisation of 'Other' P&M (£20.8 million works in CP).

Information Management
The £32 million variance is due to efficiencies, cancellations and re-phased works.

Telecoms
The £80 million variance is largely due to slippage on site build owing to a change in programme delivery from Work Bank to Completion Area as well as commercial strategy changes that bundle large volumes to achieve better rates. Adverse weather during the winter also contributed to slippage. £17 million of the variance has also been due to slower than expected progress in getting bilateral agreements with TOCs/FOCs on cab fitment.

Other
The variance in this category is largely due to deferrals of some projects until later in the control period, notably projects on the Efficient Engineering Access programme on the West Coast. In addition the Delivery Plan also included an allowance for contingency that was not utilised in the year.

Section 7 – Efficiency

This section provides an assessment of the level of efficiency we have achieved in 2009/10 for controllable operating costs, maintenance and renewals.

Cost Efficiency Measure

The Cost Efficiency Measure (CEM) is our new internal measure of cumulative efficiency savings in controllable opex, maintenance and renewals. It measures efficiency savings compared to a baseline level of expenditure that reflects cost levels at the start of CP4. Drawing on a large number of detailed inputs from across the business, the measure captures our progress in achieving savings over CP4. We believe it provides an appropriate measure of savings being achieved compared to a realistic baseline that reflects the challenges we face over CP4.

The CEM is expressed as the total efficiency of controllable operating costs, maintenance and renewals costs compared to the pre-efficient baseline for these items normalised to take into account changes to capacity. The pre-efficient baseline developed by the company at 1 April 2009 is the basis used in the calculation.

The cost efficiency measure comprises:

- unit cost and volume efficiencies for major volume related activities;
- other direct cost efficiencies (where major volume related activities have not been identified); and
- indirect costs.

It is important to emphasise that the measure combines unit cost efficiencies as well as sustainable volume efficiencies; any volume efficiency must be demonstrated not to have an adverse impact on the condition of the infrastructure or our future funding requirements. We start from an assumption that positive variances in volumes are deferrals, and will only include volume reductions as efficiency on the basis of specific analysis that validates this treatment. Measures are in place where regular management meetings review reporting unit analysis capturing scope and activity efficiencies, unplanned slippage, planned slippage and work brought forward from future reviews to identify actual efficiencies delivered.

The efficiency challenge

The 2008 Periodic Review set output targets and provided funding based on ORR's assessment of the expenditure needed to deliver these outputs. The expenditure determination included challenging assumptions for improving efficiency. The determination specified profiles for efficiency improvement over the control period. Table 7.1 shows the profiles of the efficiency saving assumptions made by ORR in its periodic review for opex, maintenance and renewals and Table 7.2 shows these savings in cash terms totalling to £930 million in the last year of CP4.

In the last control period we achieved savings in overall operation, maintenance and renewal costs of some 27 per cent; this was a significant achievement albeit slightly behind the ORR target for CP3 of 31 per cent. For CP4 the ORR has assumed further savings of 21 per cent by the end of CP4. However, this was based on an assumption that we would achieve efficiency savings of more than 27 per cent in CP3.

We have established our Cost Efficiency Measure (CEM) to track cumulative savings over CP4 in controllable opex, maintenance and renewals. The CEM uses a baseline that takes into account the actual efficiency savings achieved in CP3 rather than the level assumed by ORR in its final determinations for CP4. It also takes into account specific increases in costs in 2009/10 that were not reflected in ORR's assumptions, particularly the lagged effect of staff cost increases that were agreed in Autumn 2008 when prevailing inflation was higher than experienced in 2009/10. The pay increase was 3.5 per cent, which included three per cent RPI and 0.5 per cent increase agreed with the unions. As a result of these increases, we need to achieve savings of nearly 24 per cent (as measured by the CEM) over CP4 to reduce costs to the level assumed by ORR. The CEM enables us to measure our progress in driving down costs during CP4 based on the challenge we faced at the start of the control period.

Using this measure, we have achieved savings of £265 million (5.8 per cent) in the first year compared to the cost baselines we established for the start of CP4 as shown in Table 7.3 below.

This represents a good start to meeting the tough efficiency target set by the ORR and we are slightly ahead of our CP4 Delivery Plan. However, we recognise that the CEM does not enable continuous measurement of efficiency from the start of CP3 on a like-for-like basis. We have therefore calculated the level of efficiency that we need to achieve in CP4 reflecting the actual savings in CP3 but excluding the other specific cost increases reflected in the CEM

Table 7.1: ORR's efficiency savings assumptions

	2009/10	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*Total*
Controllable Opex	2.8%	2.8%	4.0%	4.0%	4.0%	16.4%
Maintenance	3.2%	3.2%	4.0%	4.5%	4.5%	18.0%
Renewals	5.0%	5.0%	5.5%	5.5%	5.5%	23.8%
Overall ORR efficiency assumption for CP4						21%

Table 7.2: ORR's efficiency savings assumptions (£ million)

	2009/10	*2010/11*	*2011/12*	*2012/13*	*2013/14*	*Total*
Controllable Opex	22	44	74	104	131	376
Maintenance	39	76	120	170	216	621
Renewals	142	259	369	475	583	1,827
Total	**203**	**379**	**563**	**748**	**931**	**2,824**

Table 7.3: Savings since the end of CP3 as reported by our Cost Efficiency Measure (CEM)

	Saving (£m)	*Saving (%)*
Controllable Opex	19	1.9
Maintenance	86	7.4
Renewals	160	6.6
Overall saving	265	5.8

baseline. On this basis, we will need to deliver efficiency savings of 22 per cent in CP4 and have achieved savings of four per cent in 2009/10. As this does not reflect the full challenge we need to manage from the start of CP4, we will continue to use the CEM to measure progress. The impact of using an alternative baseline is shown in Figure 7.1.

It is important to note that the measurement of efficiency improvement against these targets is not, and will never be, a straightforward exercise. The determination did not define baseline volumes of activity or unit costs against which changes could be measured, and there is limited information on the unit costs of activities in 2008/09 to provide benchmarks.

Operating and maintenance baseline

The CEM baseline we have set for operating and maintenance (O&M) costs reflects our best assessment of the position at the start of CP4 against which to measure savings. As noted above, it is different to the position ORR assumed in its 2008/09 determination and because we were slightly behind the ORR starting point, it means that savings measured by the CEM will have to be slightly greater than the ORR's annual targets to achieve the end of CP4 cumulative target. A comparison of our CEM baseline with the ORR assumption is illustrated in Figure 7.2 below. This shows adjustments to the ORR pre-efficient O&M cost of £2,015 million (inflated from the determination figures to 2009/10 prices) to give our CEM baseline of £2,135 million.

The components of the adjustment comprises the following:

- add £55 million for increases applied to 2009/10 costs (3 per cent) compared to the November 2009 RPI of 0.3 per cent reflecting the delayed impact of the effect of inflation – not included in the ORR baseline;
- add £60 million for difference between actual CP3 exit rate compared to ORR assumption for periodic review;
- add £30 million for adjustments due to the additional maintenance cost required to offset the planned reductions in track renewals plus the impact of redundancy costs – not included in the ORR baseline; and
- less £25 million for deferral of some National Stations Improvement Plan (NSIP) maintenance spend and performance fund to later years.

Based on the baseline used in the CEM, the Network Rail efficiency target for 2009/10 was £85 million (4.0 per cent). However the actual efficiency savings as measured by the CEM show that we exceeded the target, achieving efficiency savings of £105 million (4.9 per cent) over 2009/10.

Figure 7.1: Efficiency challenge from alternative baselines

Figure 7.2: CEM baseline compared with ORR baseline

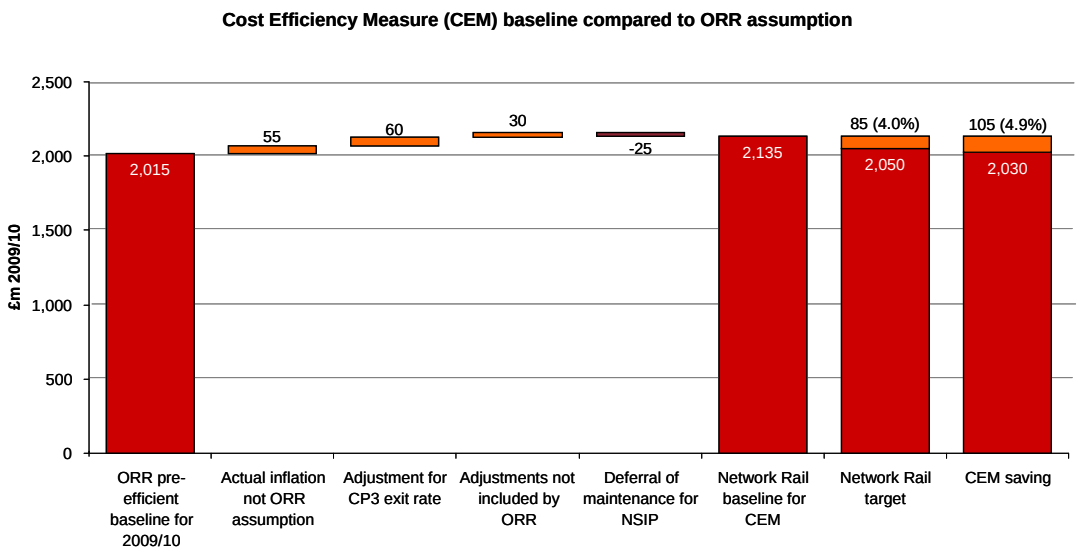


Table 7.4: Renewals baselines

	Baseline 2009/10* £m
Track	767
Signalling	449
Civils	381
Other	834
Total	**2,431**

Note: * Renewals baseline will vary year on year dependant on planned volumes

Renewals baseline

The CEM baseline costs for renewals are calculated on the principle that for work where clearly identifiable repetitive activity unit cost and volume information is available, baseline unit rates are multiplied by baseline volumes. For work where it is not possible to identify repeatable work activity, the baseline cost is five per cent above the actual cost representing a saving on the pre-efficient determination, assuming that the outputs are delivered. The exception is the non-repeatable element of track renewals, for which the baseline is the previous year's actual expenditure inflated accordingly. The renewals baselines at the start of 2009/10 are shown in Table 7.4 above. Renewals baselines will vary year-on-year depending on the volumes planned to be delivered in each year; the CEM process includes measures to make sure that changes in planned volumes are not simply deferred from one year to the next and that valid volume efficiencies are verified and recognised as such.

Overall assessment

The results from our CEM at the end of 2009/10 are shown in Table 7.5. We made good progress in reducing costs resulting in 2009/10 costs for the company's operating, maintenance and renewal activities being £265 million lower than the baseline. This is reflected in the CEM, showing an efficiency achievement of 5.8 per cent overall. This means that in 2009/10 we carried out work at a cost that was £265 million less than the prevailing costs at 1 April 2009.

Scotland and England & Wales

The cost efficiency relating to Scotland is shown in Table 7.6 and that for England & Wales in Table 7.7 (note: totals for England & Wales and Scotland might not sum to GB totals due to rounding).

The cost efficiency result for England & Wales was higher than that for Scotland due in large part to not being so badly affected by adverse weather; the severe weather in 2009/10 had a more detrimental impact on operations in Scotland. The Scotland result is always likely to be more volatile than England & Wales as it reflects the conditions applicable to only one route.

Table 7.5: Efficiency savings achieved for 2009/10

		By end 2009/10		
	Baseline (£m)	***Actual expenditure (£ million)***	***Cost savings achieved (£ million)***	***Cost savings achieved (%)***
Controllable opex	977	959	19	1.9
Maintenance	1,158	1,071	86	7.4
Renewals*	2,431	2,271	160	6.6
Total	**4,566**	**4,301**	**265**	**5.8**

Note: *Renewals baseline is adjusted for volumes

Table 7.6: Cost efficiency – Scotland

	Baseline (£m)	***By end 2009/10***	
		Actual expenditure (£m)	***Cost saving achieved (%)***
Controllable Opex	93	92	0.0
Maintenance	98	91	6.7
Renewals*	230	217	6.0
Total	**421**	**401**	**4.8**

Note: *Renewals baseline is adjusted for volumes

Table 7.7: Cost Efficiency – England and Wales

	Baseline (£m)	***By end 2009/10***	
		Actual expenditure (£m)	***Cost saving achieved (%)***
Controllable Opex	884	866	2.2
Maintenance	1,060	979	7.5
Renewals*	2,201	2,054	6.7
Total	**4,145**	**3,900**	**5.9**

Note: *Renewals baseline is adjusted for volumes

Operating costs

As shown in Table 7.3, above, controllable opex efficiency savings totalled £19 million (1.9 per cent) compared to the baseline; these were achieved largely through staff cost savings. Although this may not appear a large saving in the context of the CEM result, it was significantly better than the budget in which we assumed no overall savings, as we assumed the lagged impact of November RPI inflation on our costs (particularly on staff costs) would offset efficiency savings.

There were a number of factors contributing to this improvement. For example, average salaries across the company increased by 2.3 per cent during the year. This absorbed the 3.5 per cent pay rise for non-management grades agreed in December 2008 on the basis of prevailing inflation in autumn 2008. Additional costs were absorbed by freezing managerial salaries and by replacing leavers with internal promotion.

The ORR set a target of 16.4 per cent for controllable opex efficiencies to be achieved for the control period. This level of savings can only be delivered by planning and implementing a major transformation programme. However, it takes time to fully execute this and hence realise the savings. Consequently our profile of efficiencies is lower at the beginning of the control period, but higher at the end.

Maintenance

Maintenance savings for 2009/10 as recorded in the CEM amounted to £86 million (7.4 per cent) in total. Improved management controls and planning led to a reduction in overtime costs and a reduction in the use of labour subcontractors for core work, resulting in savings of £21 million. We have invested in training over recent years and in 2009/10 we utilised the increased skills of our employees to carry out tasks previously carried out by contractors. We are dedicated to reducing waste; for example, our fleet management team have achieved a significant reduction in vehicle numbers (10 per cent lower) leading to savings of over £10 million.

We made significant progress in developing the Maintenance Unit Cost (MUC) framework as it continued to mature during 2009/10. The Phase 2a organisation restructure that was embedded in 2008/09 has provided a strong platform for improvement, allowing cross-comparability between our 40 homogenous delivery units. The focus of our work on the MUC framework during 2009/10 has been to emphasise the following key areas:

- embed the new framework for measuring MUCs, supported by full multi-disciplinary reviews to establish and share current best practice;
- improve the capture and recording of cost and volume activity data. 2009/10 has been the first full year using an ‘industry standard’ time capture tool (Oracle Time and Labour). This makes direct comparison with previous years difficult;
- developing additional econometric techniques (e.g. regression analysis) to benchmark across our 40 delivery units. These are used in parallel with unit costing to identify and drive best practice;
- sharing of ‘Best Practice’ across the delivery units to impact the cost base of the business; and
- develop important workstreams around improvements to our internal standards (FRM702), which have yielded significant progress in our data capture and recording.

Table 7.8: Maintenance unit costs

Ref	*Description*	*Unit of Measure (unit)*	*2009/10 Unit Cost (£/unit)*
MNT001	Manual Ultrasonic Inspection of Rail	Rail Mile	325
MNT002	Rail Changing	Rail Yard	110
MNT003	Manual Spot Re-sleepering	No. of Sleepers	170
MNT004	Plain Line Tamping	Track Mile	4,127
MNT005	Stoneblowing	Track Mile	3,777
MNT006	Manual Wet Bed Removal	No. of Bays	135
MNT008	S&C Unit Renewal	No. of S&C units	10,131
MNT010	Replacement of S&C Bearers	No. of S&C Bearers	211
MNT011	S&C Arc Weld Repair	No. of Repairs	676
MNT013	Level 1 Patrolling Track Inspection	Track Miles Inspections	83
MNT015	Weld Repair of Defective Rail	No. of Repairs (weld)	490
MNT016	Installation of Pre-Fabricated IRJs	No. of Joints	1,365
MNT019	Manual Correction of Plain Line Track Geometry	Track Yards	18
MNT020	Manual Reprofiling of Ballast	Track Yards	3.5
MNT026	Replenishment of Ballast Train	Tonnes	17
MNT027	Maintenance of Rail Lubricators	Each	209
MNT029	Replacement of Pads & Insulators	Sleepers	4.3
MNT050	Point End Routine Maintenance	Services	55
MNT051	Signals Routine Maintenance	Services	87
MNT052	Train Detection	Services	52
MNT073	Drainage	Drainage Yards	7.1
MNT077	Signs	Each	19

Reported data

We have reviewed the variability of MUCs, including deviation between delivery units. Last year we reported on a total of 12 unit costs and now, with the improvements made in our processes and enhanced data quality, we are able to increase this number to 22 for 2009/10. Table 7.8 above lists the unit costs for the 22 MUCs.

As stated in our 2009 Annual Return, detailed changes to the maintenance unit cost framework structure, made at the start of the 2009/10 financial year, in general preclude direct year-on-year comparison of unit costs on a like-for-like basis due to changes in unit cost definitions. For example the unit cost of rail changing (MNT002) now includes thermic welding, transport of materials to site and signalling and telecoms support, to reflect the full cost of the activity and consequently this unit cost will be higher than it was previously. We believe however that significant progress has been made during 2009/10 to enable sharing of best practice across the function to understand and reduce the underlying cost base.

Changes to measures

During 2009/10 we have continued to review our maintenance unit cost framework and introduce improvements where appropriate as part of our ongoing drive for continuous improvement. Having held reviews with key stakeholders and taken on board feedback from Arup (Independent Reporter) we have concluded that some further changes to the measurement structure may be beneficial. In the main, these changes will involve disaggregating single MUCs to provide further clarity on repeatable, cyclic activities. However such changes may very well preclude back comparability with previous years for affected unit costs. We will consider at what time during the financial year it is best to make these changes, to maximise operational utility and avoid interference with the business planning process.

Changes to process

The MUC production cycle has been steady across the financial year 2009/10 to allow us to focus on improving data quality.

As part of our continuous improvement approach to the multifaceted area of MUCs, a range of improvements have been made throughout the year. These include:

- substantial review and update of FRM702 as part of continuous improvement of the MUCs;
- conversion methods between complex units of measure have been reviewed as part of this process;
- MUCs are now produced twice during each four week period;
- Oracle Time and Labour (OTL) being used for recording all labour data during 2009/10; this is a significant improvement from 2008/09;
- a review of working gang locations versus Ellipse recorded locations has been completed; and
- MUCs are now reported on a delivery unit direct comparison basis, graphically and with data tables.

Renewals

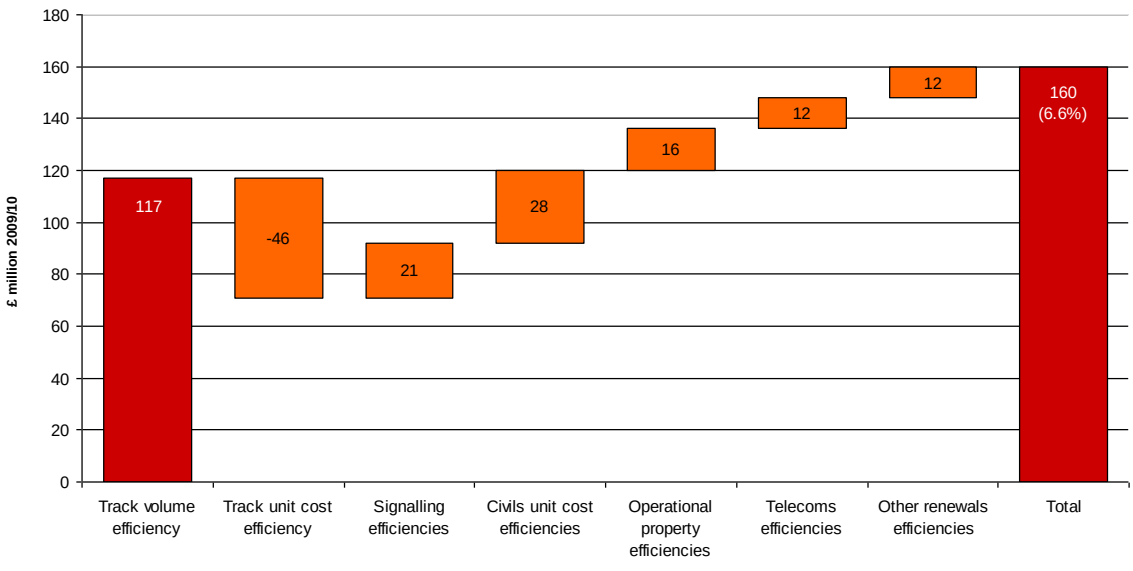
Renewals achieved overall cost efficiency savings of £160 million (6.6 per cent); Figure 7.3 shows a breakdown of the saving contributions made by asset type as recorded by the CEM. The Track volume efficiency of £117 million achieved through the introduction of new asset management policies, focussed on managing our assets in a best whole-life value, sustainable way, more than offset the increased Track unit costs that resulted from mainly fixed indirect costs being allocated to a significantly reduced unit cost volume base.

Renewals unit cost indices

Capital delivery unit costs are measured and recorded at project completion using the Cost Analysis Framework (CAF), with the exception of Track which uses the Primavera system. Not all projects are reported in CAF; those projects that have a final cost of less than £50,000, and projects that are non-repeatable due to their unique nature (e.g. major projects), are not reportable. Reportable projects whose costs and volumes have been verified are referred to as "benchmark" projects and their data are used to calculate repeatable work item (RWI) unit rates for benchmarking future projects.

The CAF process reports on the unit costs of 43 repeatable work activities and at the end of 2009/10 the unit cost coverage recorded by CAF was 54.3 per cent of the total renewals budget. CAF has been substantially updated during 2009/10 and now includes costs and volumes for a larger proportion of the asset portfolio and also Enhancement expenditure. Ongoing work is planned for the CAF process to further improve coverage and the robustness of the underlying data.

Figure 7.3: Renewal efficiency savings achieved in 2009/10



A summary of headline asset unit cost index performance is shown in Table 7.9. This is generated by weighting together the asset indices within assets in proportion to spend. The overall index of 98 implies an aggregate unit cost efficiency of two per cent. However, it should be noted that this is dominated by the Track renewals performance where reductions in volume and changes in work mix produced volume efficiency savings at the cost of an upward pressure on unit costs.

Asset commentaries – Track

Unit Rate efficiencies reported in CEM for Track in 2009/10 are shown in Table 7.10 below equating to an overall inefficiency of £46 million (-9.1 per cent). This inefficiency was more than offset by volume efficiencies achieved of £117 million. The reduction in Track volumes are shown in Table 7.11, below.

Background

While CEM reports more broadly based measures that include scope (i.e. volume) efficiencies, these figures are purely unit rate based (i.e. the price for work actually delivered). They compare unit rates for plain line and switches and crossings (S&C) expressed in 2009/10 prices to enable like-for-like comparison.

2009/10 Unit rates Compared with 2008/09

Table 7.10 shows that unit rates increased in 2009/10 compared with 2008/09, for both plain line and S&C. The principal drivers for these increases are the relatively short notice deferral of 2009/10 volume, driving up indirect costs per unit over the year, combined with work category mix effects. Volumes have been deferred to enable development of more efficient methods of delivery providing the opportunity for driving out additional efficiencies later in CP4.

Indirect costs

The relatively short notice decrease in planned volumes resulted in essentially the same indirect cost base in 2009/10 compared with 2008/09, but with a decrease in volumes. This resulted in an increased indirect cost allocation per unit volume, which was then carried on into an increased overall unit cost (see Table 7.10 below). We have assessed the impact from indirect costs to consider what the unit costs would have been on a like-for-like basis; the net impact was to increase the plain line unit cost by £21,600 per composite kilometre (ckm) and the S&C unit cost by £52,500 per equivalent unit (equ). The cost base was greatly reduced over the course of the year, but with a significant time lag. The reduction in Track volumes are shown in Table 7.11 below.

Table 7.9: Unit Cost indices for first year of CP4

Index (100 = 2008/09)	*Unit cost index 2009/10*	*2009/10 RWI costs as % of asset spend*	*Unit cost index movement 2008/09 to 2009/10 (%)*
Civils	98.6	37.3	1.4
Track – plain line (composite)	112.0	70.6	(12.0)
Track – S&C (equiv units)	101.0	23.0	(1.0)
Track – total	109.1	93.6	(9.1)
Major signalling	102.1	74.7	(2.1)
Telecoms	86.6	65.2	13.4
Overall	**98.0**	**57.1**	**2.0**

Table 7.10: Composite rate measures

Rate at 2009/10 prices	*2008/09*	*2009/10*	*2009/10 efficiency saving from 2008/09*(%)*
Plain line renewal (£ per metre)	249	279	(12.0)
S&C equivalent unit renewal (£000 per unit)	506	511	(1.0)
Aggregate efficiency			(9.1)

Note: * Negative numbers represent inefficiency

Table 7.11: Track volumes*

	Unit of measure	*2008/09*	*2009/10*	*Change (%)*
Plain Line	Composite Km (ckm)	2,532	1,756	(31)
S&C	Equivalent units (equ)	415	319	(23)

Note: * Excludes track volumes delivered by West Coast delivery teams

Category work mix

Work mix changed significantly for plain line between 2008/09 and 2009/10. The focus on higher priority projects that tend to require higher category activity resulted in the significant move away from relatively low unit rate Cat 2 rerailing projects towards inherently high unit rate Cat 11 projects, contributing to the apparent increase in plain line unit costs. Movements in plain line volumes are shown in Table 7.12, below.

We have assessed the impact from the different plain line mix of work in 2009/10 to consider what the unit costs would have been on a like-for-like basis; the net impact was to increase the plain line unit cost by £23,700 per ckm

Net impact

Taken together, the impacts of indirect cost and category mix have exerted a strong upward pressure on 2009/10 unit rates. Efficiency initiatives have brought actual unit rates down, but these decreases have been obscured by the above noted factors. The net impact of factors (on a 2009/10 price basis) is shown in Table 7.13, below.

Table 7.13 also shows that if the indirect cost impact and the work mix impact are taken into account the like-for-like comparison of 2009/10 rates and 2008/09 rates would have resulted in efficiencies of 6.4 per cent in plain line and 9.4 per cent in S&C.

Table 7.12: Plain line volume changes

	2008/09	*2009/10*	*Change*
Cat 2 – Rerail both rails	35%	14%	-21%
Cat 4 – Rerail, resleeper (steel)	21%	17%	-4%
Cat 10 – Rerail, resleeper, reballast (ABC method)	3%	3%	0%
Cat 11 – Rerail, resleeper, reballast (Traxcavate method)	24%	32%	8%
Cat 14 – Rerail, resleeper, reballast, formation (traxcavate)	4%	6%	2%
Other	13%	28%	15%
Total	**100%**	**100%**	**0%**

Table 7.13: Impact on unit cost factors 2009/10

	Unit of measure	*2008/09 unit rates*	*2009/10 gross unit cost*	*Indirect Cost Impact*	*Work mix Impact*	*2009/10 net unit cost (like-for like)*	*Net efficiency (like-for-like) %*
Plain Line	£000/ckm	249	279	(22)	(24)	234	6.1
S&C	£000/equ	506	511	(53)	n/a	458	9.4

Asset commentaries – Civils

Buildings and Civils efficiency savings that have been achieved in 2009/10 as measured by the CEM, are shown in Table 7.14.

Unit cost data for Civils is shown in Table 7.15 below for those activities that are categorised as repeatable work items; this explains why the proportion of each asset total renewals spend does not sum to 100 per cent.

Coverage

There is an eight-week delay from project completion before project data is captured in CAF and used to calculate unit cost data. To date CAF has captured 37.3 per cent of the planned 2009/10 outturn expenditure for Civils. However it should be noted that the coverage percentage will increase as those projects that are still in their eight-week close-out period are captured in the CAF system. Current Civils unit cost coverage is summarised in Table 7.16 below.

Table 7.14: Buildings & Civils efficiency savings

	2009/10 (%)	*2009/10 (£m)*
Civils CEM	7.3	28
Buildings CEM	7.2	

Table 7.15: 2009/10 Final costs of profiled RWIs per asset as % of renewals spend and efficiency indices

Asset	*Activity Type*	*Activity Costs reported 2009/10*	*Proportion of each asset total renewals spend*	*Unit Cost 2008/09*	*Unit Cost 2009/10*
		£000s	*%*	*£000/unit*	*£000/unit*
CIVILS	701 Overbridge	11,875	4.0	3.09	2.54
	702 Underbridge	57,873	17.0	2.55	2.06
	703 Overbridge – Bridgeguard 3	9,302	3.0	2.38	3.93
	704 Footbridge	5,159	2.0	4.27	3.61
	705 Tunnel	1,344	0.1	0.27	0.07
	706 Culvert	3,806	1.0	1.18	2.56
	707 Retaining Wall	2,207	1.0	0.75	0.90
	708 Earthworks	32,084	10.0	0.20	0.13
	709 Coastal & Estuarial Defences	139	0.1		2.14
	Total	**123,789**	**37.3**		

Table 7.16: Civils unit cost coverage

	2009/10 Planned outturn expenditure	*Proportion of total expenditure (%)*
Benchmark CAF projects	123,789	37.3
*Outliers (major projects etc)	59,219	17.8
CAF Period 12/13 to be reported	107,670	32.4
Non reportable (minor works)	40,684	12.3
Total	**331,362**	**100**

Note: “Outliers” include projects and/or activities that are not repeatable

Asset commentaries – Signalling, Power & Communications (SP&C)

SP&C uses the CEM as the main measure of efficiency and the CAF is used to report cost and volume at Guide to Railway Investment Projects (GRIP) stages four and seven. However, due to projects spanning several years there is a significant time lag between projects starting and all reportable outturns for a particular year being captured within CAF. The CEM calculates periodic efficiency based on spend to date against the defined outputs in terms of volumes and is annualised across the life of the project, based on the expected final cost recorded in CAF at GRIP stage four. This is then verified at the final CAF in GRIP stage seven. Reported efficiency savings made in 2009/10 for total SP&C expenditure are shown in Table 7.17 below.

Communications is delivering efficiencies and volumes at the planned rates of five per cent.

Signalling efficiency savings of 4.0 per cent overall were achieved mainly as a result of efficiencies in South Erewash (£5.2 million) and further efficiencies from a number of minor schemes. Additionally, signalling volumes are greater than anticipated in the CP4 Delivery Plan as a result of accelerated works at Newport. This has been partially offset by unexpected increases in contractor costs within the Colchester-Clacton and Basingstoke projects.

Electrification & Plant's (E&Ps) achieved efficiency savings of 1.6 per cent were less than planned, primarily due to the higher than planned cost of a number of key projects including the General Electrification (GE) project. It should be noted that the impact of the increase in costs within E&P are likely to further impact on future years' efficiency.

Unit costs for SP&C for 2008/09 and 2009/10 are shown in Table 7.18, below, for those activities that are categorised as repeatable work items; this explains why the proportion of each asset total renewals spend does not sum to 100 per cent.

Table 7.17: SP&C efficiency savings

	2009/10 (%)	*2009/10 (£m)*
Signalling	4.0	21
Power (electrification & plant – E&P)	1.6	1
Communications	5.0	12
SP&C Total	3.7	34

Table 7.18: 2009/10 Final costs of profiled RWIs per asset as % of renewals spend and efficiency indices

Asset	*Activity Type*	*Activity Costs reported 2009/10*	*Proportion of each asset total renewals spend*	*Unit Cost 2008/09*	*Unit Cost 2009/10*
		£000s	*%*	*£000/unit*	*£000/unit*
Signalling	101 – Re-signalling	304,644	71.0	316.6	267.4
	102 – Control Renewal	2,321	0.5	19.0	N/A
	103 – Interlocking renewal	2,820	0.7	171.0	8.8
	108 – Level crossing renewals – MCB Type	4,127	1.0	926.7	1,087.5
	108 – Level crossing renewals – MCB Type with CCTV	6,810	1.5	706.8	N/A
	Total	**320,723**	**74.7**		
Telecoms	501 – Large concentrator	5,455	12.0	3.8	15.0
	502 – DOO CCTV	6,543	15.0	50.8	71.3
	503 – PETS/Level crossing	1,800	7.0	21.9	22.4
	504 – Small signal box concentrator	3,257	4.0	6.4	5.9
	506 – Customer Info system	10,665	24.0	295.9	273.0
	507 – Long line address system	8,461	19.0	247.9	49.6
	Total	**36,181**	**65.2**		

Section 8 – Finance

Introduction

This section reports on various finance measures, income and PR08 incentive arrangements.

Debt to RAB ratio

This financing indicator measures Network Rail's net debt as a percentage of its regulatory asset base (RAB). This can be considered as a proxy for the financial gearing of the company and indicates Network Rail's ability to finance its activities in a sustainable manner.

The measure is calculated by dividing the company's regulatory net debt by the year end RAB and expressing this as a percentage. The company's debt and the RAB used for this calculation aligns with the ORR definition of debt and RAB as defined by the Regulatory Accounting Guidelines.

Under Licence Condition 3 the company must take all reasonable endeavours to keep the debt to RAB ratio below 70.0 per cent during 2009/10 and 2010/11, 72.5 per cent during 2011/12 and 75 per cent during 2012/13 and 2013/14.

The debt to RAB ratio at the end of the year was 63.9 per cent against a target of 64.0 per cent.

Volume incentive (freight and passenger)

The volume incentive provides a financial benefit to Network Rail if, by the end of CP4, growth in passenger and freight traffic and passenger revenue is higher than the baselines set by ORR at the last periodic review. It follows the approach adopted for the incentive mechanism in CP3 albeit with different baseline assumptions and payment rates and with the form of payment being as a cash amount in CP5 rather than a RAB addition. The incentive is calculated for four separate components which are described below:

The passenger volume incentive components are based on the incentive rates determined by ORR multiplied by actual growth over and above a baseline level of growth in:

- passenger train miles; and
- farebox revenue.

The freight volume incentive components are based on incentive rates determined by ORR multiplied by the growth over and above a baseline level of growth in:

- freight train miles; and
- freight gross tonne miles.

By the end of 2009/10 only one of the four components, passenger train miles, triggers any incentive payment. There was a decrease in freight traffic in 2009/10 compared to the previous year and only a very small increase in passenger farebox revenue (below the baseline increase) and so no payments are triggered for these components.

Table 8.1: Debt to RAB ratio (per cent)

	2008/09 actual	*2009/10 Plan/target*	*2009/10 actual*
Limit in Licence Condition 3	85.0	–	70.0
Great Britain	70.0	64.0	63.9
England & Wales	n/a	n/a	64.0
Scotland	n/a	n/a	62.6

Table 8.2: Volume incentive forecast at 2009/10

	England/Wales £m	*Scotland £m*	*GB total £m*
Passenger train miles	33.3	3.0	36.3
Passenger farebox	0	0	0
Freight train miles	0	0	0
Freight gross tonne miles	0	0	0
Total incentive	**33.3**	**3.0**	**36.3**

AICR ratio

The adjusted interest cover ratio (AICR) is a measure of Network Rail's ability to pay interest on its debt after taking into account all running costs including steady state renewals. Network Rail's AICR for the year was 1.76 which is better than the business plan. This demonstrates that the level of interest payable is affordable because the business generated operational revenue that was 76 per cent greater than the cash required to pay its net financing costs.

Total interest costs

Total interest costs measures Network Rail's cost of borrowing.

Total interest payable refers to the amount payable in the year. There are three further adjustments made in order to calculate total interest costs as defined by international generally accepted accounting principles. These are as set out in the table below (Table 8.4).

In the year we paid interest on borrowings of £731 million against planned costs of £761 million. The reason for the positive variance was that it cost less to borrow than planned. Average borrowing rates (excluding the financial indemnity fee) were at 3.3 per cent compared to the planned borrowing cost of 3.5 per cent. Around a third of the positive variance was due to issuance having a greater proportion of index linked bonds than planned.

There was relatively little volume variance due to the plan assuming expenditure being incurred in the later part of the year, and because the RPI-linked debt increased in line with inflation increases in the year.

Network Rail benefits from the financial indemnity mechanism (FIM) from the Secretary of State for Transport, for which £174 million was paid in 2009/10. This is charged at a rate of 0.8 per cent of net debt.

Accretion refers to the amount that index linked borrowings increase by as a result of inflation. Index linked investors are paid a small real rate coupon during the borrowing term. On maturity the bond is repaid after inflating its value using the movement in the RPI between issuance and redemption. In the year RPI rose by 4.4 per cent. The plan assumption was that there would be deflation of 1.5 per cent in the year.

The pension scheme includes a notional financing item which is calculated by unwinding one years discount of the defined benefit obligation and adding this to the expected return on pensions assets. Depending on the level of returns and the discount rate used to measure the present value of defined benefit obligations this can be a notional charge or a notional credit and is not included in the business plan.

Table 8.3: Adjusted interest cover ratio

	2009/10 target	*2009/10 actual*
Great Britain	1.70	1.76
England & Wales	n/a	1.77
Scotland	n/a	1.69

Table 8.4: Interest costs (Great Britain) £m in 2009/10 prices

	2009/10 Actual	*2009/10 Plan*	*Difference*
Interest costs	731	761	30
FIM fee	174	174	–
Total interest payable	**905**	**935**	**30**
Accretion	347	(140)	(487)
Expected return on assets less interest on liabilities in respect of the defined benefit pension scheme	40	–	(40)
Capitalised interest	(95)	(99)	(4)
Total interest costs	**1,197**	**696**	**501**

Interest is capitalised on the borrowing costs relating to assets in the course of construction in line with International Accounting Standard 23 Borrowing Costs. It is then depreciated over the useful economic life of the constructed assets.

Although all borrowing is on a GB wide basis a notional interest charge can be apportioned for Scotland and England and Wales on the basis of activities undertaken in the year in those geographical areas. The values are set out below in Tables 8.5 and 8.6.

Table 8.5: Interest Costs (England & Wales) £m at 2009/10 prices

	2009/10 Actual	*2009/10 Plan*	*Difference*
Interest costs	662	682	20
FIM fee	158	157	(1)
Total interest payable	**820**	**839**	**19**
Accretion	315	(128)	(443)
Expected return on assets less interest on liabilities in respect of the defined benefit pension scheme	36	–	(36)
Capitalised interest	(85)	(89)	(4)
Total interest costs	**1,086**	**622**	**(464)**

Table 8.6: Interest Costs (Scotland) £m at 2009/10 prices

	2009/10 Actual	*2009/10 Plan*	*Difference*
Interest costs	69	79	10
FIM fee	16	17	1
Total interest payable	**85**	**96**	**11**
Accretion	32	(12)	(44)
Expected return on assets less interest on liabilities in respect of the defined benefit pension scheme	4	–	(4)
Capitalised interest	(10)	(10)	(20)
Total interest costs	**111**	**74**	**185**

Income

Network Rail's income is largely determined by the PR08 final determinations. It generates passenger franchise revenue, revenue grants, freight income, property rental income and open access income from its operations. Total income was almost exactly in line with our delivery plan.

Network-wide income

The proportion of passenger trains running on time rose to 91.5 per cent, significantly better than last year's level of 90.6 per cent. But the unprecedented weather in January meant that punctuality was difficult to deliver that month, and cost Network Rail over £40 million in performance related compensation payments to customers. The severe winter weather caused 40 per cent of the delay minutes in January.

Better planning of investment work meant there were reduced payments to train operators for disruption caused by that work.

Net additional income from CP4 performance and availability payments was £42 million, which was £32 million better than assumed in the CP4 Delivery Plan.

Property income, mainly from small and medium sized businesses across the estate and retail tenants at the major stations, held up relatively well in the recession and outperformed the plan. Property sales activity remained low as expected in view of the prevailing economic conditions.

Table 8.7: Network-wide income £m (2009/10 prices)

	Plan	*Actual*	*Variance*
Incentive regimes			
Schedule 8	0	2	2
Schedule 8 access charge supplement	0	3	3
Schedule 4	(177)	(151)	26
Schedule 4 access charge supplement	187	188	1
Total	**10**	**42**	**32**
Franchised access charges			
Variable track access	129	137	8
Electric asset usage	8	8	0
EC4T income	242	227	(15)
Capacity charge	147	156	9
Station income (incl. QX)	83	86	3
Station long-term charge	151	160	9
Depots income	49	54	5
Total	**809**	**828**	**19**
Other single till			
Freight income	55	52	(3)
Open access income	19	23	4
Property income	192	202	10
Property sales	10	0	(10)
Other income	8	8	0
Total	**284**	**285**	**1**
Fixed track access	**822**	**782**	**(40)**
Network grant*	**3,730**	**3,730**	**0**
Total income	**5,655**	**5,667**	**12**

Note: * Delivery Plan figure corrected to show grant after re-profiling the Scotland grant.

England & Wales income

Table 8.8: Income – England & Wales £m (2009/10 prices)			
	Plan	***Actual***	***Variance***
Incentive regimes			
Schedule 8	0	3	3
Schedule 8 access charge supplement	0	3	3
Schedule 4	(167)	(141)	26
Schedule 4 access charge supplement	176	180	4
Total	**9**	**45**	**36**
Franchised access charges			
Variable track access	119	126	7
Electric asset usage	7	7	0
EC4T income	228	214	(14)
Capacity charge	144	151	7
Station income (incl. QX)	77	80	3
Station long-term charge	136	146	10
Depots income	43	48	5
Total	**754**	**772**	**18**
Other single till			
Freight income	47	47	0
Open access income	19	23	4
Property income	180	188	8
Property sales	9	(4)	(13)
Other income	7	8	1
Total	**262**	**262**	**0**
Fixed track access	**710**	**672**	**(38)**
Network grant	**3,366**	**3,366**	**0**
Total income	**5,101**	**5,117**	**16**

Scotland income

Table 8.9: Income – Scotland £m (2009/10 prices)			
	Plan	***Actual***	***Variance***
Incentive regimes			
Schedule 8	0	(1)	(1)
Schedule 8 access charge supplement	0	0	0
Schedule 4	(10)	(10)	0
Schedule 4 access charge supplement	11	8	(3)
Total	**1**	**(3)**	**(4)**
Franchised access charges			
Variable track access	10	11	1
Electric asset usage	1	1	0
EC4T income	14	13	(1)
Capacity charge	2	5	3
Station income (incl. QX)	6	6	0
Station long-term charge	16	14	(2)
Depots income	5	6	1
Total	**54**	**56**	**2**
Other single till			
Freight income	7	5	(2)
Open access income	0	0	0
Property income	12	14	2
Property sales	1	4	3
Other income	0	0	0
Total	**20**	**23**	**3**
Fixed track access	**112**	**110**	**(2)**
Network grant*	**364**	**364**	**0**
Total income	**551**	**550**	**(1)**

Note: * Delivery Plan figure corrected to show grant after re-profiling.

Efficiency benefit sharing

The PR08 determinations established an efficiency benefit sharing mechanism whereby both TOCs and FOCs would share in any benefit we achieve from outperforming the regulatory efficiency assumptions. The purpose of the mechanism is to provide an incentive that encourages train operators to engage constructively to help us outperform. Under the mechanism, we will share 25 per cent of relevant outperformance with all train operators in the form of cash payments apportioned in line with the level of their variable track access charges.

For the purposes of the benefit sharing mechanism, outperformance is measured against the ORR final determinations as the aggregate achieved from all operating, maintenance and renewal expenditure and a number of revenue elements, such as variable charges, retail income and property income.

In 2009/10 our O&M expenditure was above the ORR final determination assumption and relevant income was marginally below the determination and so no outperformance has been achieved. Renewals expenditure was less than the determination assumption but this is primarily as a result of re-phasing activity to later years in CP4 and as our CP4 delivery plan for renewals is broadly in line with the determination it is too early to consider that the underspend in the first year of CP4 represents outperformance.

Therefore we are not reporting any outperformance of the regulatory efficiency targets at this stage.

"Fine tuning"

In its advice to ministers the ORR said that there would be merit in enabling the industry to 'fine-tune' the regulatory determination for Network Rail if it became apparent that another party could contribute to delivery of an HLOS output more efficiently.

The ORR confirmed in June 2008 that Network Rail should enter directly into commercial negotiations with relevant operators, as opportunities arise. The ORR will facilitate this within the wider regulatory regime. It defined PR08 outputs and the regulatory framework with flexibility to ensure that there are no obstacles to such 'fine tuning'.

This section of the report will set out details of occasions where 'fine tuning' events have been agreed. At this stage in the control period there have been no events to report in this section.

Section 9 – Enhancements

Introduction

This Annual Return section reports on our progress in delivering enhancements to the rail network in the year 2009/10. Some of these enhancements have been driven by the commitments made during the CP4 settlement and have been funded by that settlement (enhancement plan projects). Others have been generated by stakeholders who have had development opportunities which we have supported (third party projects) or by new government promoted initiatives such as electrification. Many of the enhancement projects which have been delivered in this financial year had their genesis prior to 2009. In all cases the enhancements have been consistent with our route strategies in developing the rail network for the benefit of passengers and freight users.

Many of our enhancement projects are driven by the need to improve the station environment and the connectivity of the rail service to other modes of transport, in this category are the development of rail interchanges, car parks, remodelling and improvements to existing stations; and in some instances the development of new stations. Other enhancement projects are driven by the need to improve the flexibility and capability of the network to handle longer and heavier trains to increase the carrying capability of services or to improve their journey times.

During 2009/10 a number of significant projects were completed, these included a number of NRDF funded projects such as Yeovil to Exeter, Tunbridge Wells and some linespeed enhancements at Kettering; and Glasgow to Kilmarnock capacity enhancement which was completed on the 13 December 2009.

Of the £1,591 million we spent in 2009/10, £1,278 million was for projects under our enhancements plan, the remaining £313 million was for third party funded projects.

The projects detailed below are presented in the following order.

- enhancement plan projects; and
- third party funded projects.

Enhancement Plan projects

The CP4 enhancement programme is funded through the ORR's final determination for CP4 as well as the "on network" works we are expected to deliver for the Crossrail project. Each of the projects and funds in this plan has a defined set of outputs and key dates that we have committed to meet. Material changes to these can only be implemented after consultation and change control.

In 2009/10 there were 10 requests for material changes of which six were granted by ORR and the remaining four are under consideration, as at June 2010.

Expenditure during the Year

The CP4 Enhancement programme allows us to manage work packages based on their contribution to the outputs required and the synergies and dependencies between projects. Within the packages of projects our obligations may be different for each project and this is more fully covered in our document CP4 Delivery Plan 2010 Enhancements Programme. Actual expenditure incurred on each enhancement programme in 2009/10 is shown in Table 9.1.

Changes granted by ORR

ID no.	*Project*	*Change*
13.02	Reading Area Redevelopment	Increased depot scope at DfT request and subsequent revision of programme.
15.06	Route 2: suburban 10-car operations to Victoria and London Bridge	Norwood Junction – lengthening platform 5 instead of platform 6 at Train Operating Company (TOC) request.
16.06	Power supply upgrade routes 6	Scope update due to completion of modelling.
22.04	Gerrards Cross Bay platform	The capacity output will be more efficiently delivered by Chiltern's Evergreen 3 project.
32.01	Airdrie – Bathgate	Changes to scope as agreed with key stakeholders.
32.02	Paisley Corridor Infrastructure	Descoping of project by Transport Scotland. Network Rail outputs remain essentially the same.

Changes requested and still under consideration (as at June 2010)

ID no.	*Project*	*Change*
15.07	Kent train lengthening	Revised scope due to project development (since been approved).
20.00	St Pancras – Sheffield linespeed improvements	Scope and milestones due to project development.
21.00	Nottingham resignalling	Change in blockade dates due to TOC reaction (since been approved).
26.02	Cotswold Line re-doubling	Reworking of single option development leads to the delivery date moving to June 2011 (phase one) and August 2011 (phase two).

Table 9.1: Enhancement expenditure in 2009/10	
	£ million
PR08 schemes in England & Wales	
Network Rail Discretionary Fund	73
National Stations Improvement Programme	17
Intercity Express Programme	3
Strategic Freight Network	2
Performance Fund	15
Seven day railway	2
Safety and environment rollover	31
CP5 development fund	7
Access for All	53
King's Cross	86
Thameslink Programme	393
Birmingham New Street Gateway Project	0
East Coast Main Line overhead line electrification	5
St Pancras – Sheffield linespeed improvements	1
Nottingham resignalling	0
North London Line capacity enhancement	41
Station security	2
Reading	30
Platform lengthening – southern	9
Power supply upgrade	0
Southern capacity	1
East Coast Main Line improvements	9
Western improvements programme	11
West Coast Main Line committed schemes	7
Midlands improvements programme	1
Northern urban centres – Yorkshire	0
Northern urban centres – Manchester	0
Liverpool – Leeds linespeed improvements	0
Other	5
Total	**804**
PR08 schemes in Scotland	
Airdrie – Bathgate	134
Borders Rail	0
Glasgow to Kilmarnock	13
Tier 3 Development Fund	0
Small Projects Fund	1
Paisley Corridor improvements	21
Total	**169**
Total PR08 enhancement schemes	**973**
Non-PR08 enhancements funded by Network Rail	
Schemes carried over from CP3	77
Government promoted	43
Third party promoted	132
Network Rail promoted	40
Outperformance & other	13
Total Non PR08 enhancements funded by Network Rail	**305**
Non-PR08 third party funded	**313**
Grand total	**1,591**

England and Wales: Programme Funds

Programme ID 1.00 Network Rail Discretionary Fund (NRDF)

This programme is a mechanism to fund projects which can either be linked to renewals or be standalone projects which have a positive whole-industry business case. It is primarily aimed at schemes which will result in an increase in the capacity or capability of the network. Our obligation is to work with stakeholders to identify the best use of available funds.

Projects, unlike the Fund itself, span control periods and so the main focus of activities in 2009/10 was completing the delivery of a number of projects developed and part implemented using CP3 funding, together with the identification and early development of new CP4 schemes.

Over 100 schemes are presently in development or delivery, with 50 being in the construction stage. Examples of some of these schemes are given below. A selection of other projects which have been part funded by NRDF can be found in the third party funded section later in this section.

Yeovil Junction to Exeter Service Frequency Enhancement

Current Project Stage: Scheme Handback

Detailed design of the option selected to facilitate an hourly service between Yeovil Junction and Exeter St David's commenced in January 2009.

The scope of the option selected included:

- 3 mile redoubling of single line to facilitate a passing loop at Axminster station;
- associated signalling for bi-directional working on the double section;
- extensive civil reconstruction and strengthening to enable the second track bed replacement;
- a level crossing upgrade and facilitation of double tracking; and
- Axminster station upgrade to include a second platform and Disability Discrimination Act (DDA) compliant footbridge.

We agreed to complete this project by December 2009, this date was met, and the new hourly service commenced with the new December timetable.

Tunbridge Wells 12 car Turnback and signal panel renewal

Current Project Stage: Scheme Handback

The objective was to provide a 12 car turnback facility south of Tunbridge Wells station to enable Southeastern to operate an all day, four trains per hour frequency between Tunbridge Wells and London Charing Cross. This was a key part of their Service Level Commitment 2 agreement and formed part of the introduction of the high speed train service elsewhere in Kent.

In addition, opportunity was taken to combine this work with an existing scheme to renew the 1960's vintage signal panel in Tonbridge signal box, together with associated cabling and interlocking.

We agreed to complete this project by December 2009, and met that date. The new enhanced train service has been operating successfully.

Leicester to Trent Slow Line Speed Improvements

Current Project Stage: Project close out

This project supports an increase in capacity and capability of the network through an increase in line speeds on the slow lines between Leicester North Junction and Loughborough from 50mph to 65mph, and Loughborough to Trent South Junction from 50mph to 75mph. The line speed increase spans a 20 mile section of the slow lines on the Midland Main Line.

The increase in line speed has delivered improved sectional running times on the slow lines for both passenger and freight services. This change enables the East Midlands Trains Ivanhoe services between Leicester, Nottingham and Lincoln to incorporate an additional station stop at Beeston from the May 2010 timetable change. This project also provides for greater flexibility during maintenance, engineering and operational perturbation, when the fast lines are closed and all trains use the faster slow lines.

Progress in 2009/10

- the project has been successfully commissioned over three non-disruptive stages (December 2009, January 2010 and February 2010);
- East Midlands Trains have seen their best public performance measure and right time delivery recorded to date for the Ivanhoe services;

- the project has contributed to saving the industry 500 delay minutes due the increased capability of the slow lines, which helped service recovery for Train Operating Companies, Freight Operating Companies and Network Rail; and
- the project was delivered under budget.

We agreed to complete this project by March 2010 and this date was met.

Kettering to Harrowden Third Line Re-instatement

Current Project Stage: Scheme handback

This project supports an increase in capacity and capability of the network through the re-instatement of a 90mph bi-directional third line between Kettering South Junction and Harrowden North Junction on the Midland Main Line, including passive provision for a fourth line. This multi-disciplinary project has designed and constructed 4¼ miles of new track, S&C, signalling, electrical power works, and civil works on under bridges. This new line is gauge cleared to W8 with RA10 axle loadings.

The project has removed one of the largest capacity bottlenecks on the Midland Main Line by providing new infrastructure for passenger and freight customers, with both existing and new services using the third line. This project also provides for greater flexibility during cyclical maintenance, engineering and operational perturbation by providing a diversionary alternative.

We agreed to complete this project by May 2009 and this date was met.

Corby New Station and Enhanced Signalling

Current Project Stage: Scheme handback

This project supports an increase in capacity and capability of the network through the construction of a modular station building, platform and enhanced signalling allowing trains to turn back in the station platform. The project also forms part of an area regeneration programme, and has delivered a new transport interchange for Corby.

The project has built a new station and platform allowing East Midlands Trains to provide a new hourly train service to London St Pancras station. This is the first time that Corby has been served with a train service since the 1980's and is part of a wider regeneration project for the Corby area. The enhanced signalling has improved the capability of the network and from the May 2010 timetable change the existing 20 minute dwell time at Kettering station for customers has been removed providing faster journey times and an additional Saturday service. The project also provides greater timetable and operational flexibility.

The new station was officially opened in April 2009 by the then Secretary of State for Transport and in excess of 130,000 passengers have used the station since opening, beating all forecasts. The station has won a number of awards in the past 12 months including; Institution of Highways and Transportation Award for Effective Partnership, Institute of Civil Engineering Award for Team Achievement, East Midlands Regional Construction Award and East Midlands Property Award.

We agreed to commission the new station in December 2008, and commission the enhanced signalling by March 2010. Both these dates were met.

Oxford South Facing Bay Platform

Current project stage: Single Option Development

Oxford South Facing Bay Platform is a capacity related scheme. This project is being delivered within a programme of works in the Oxford area. The creation of a bay platform saves a number of shunt moves for passenger trains across the busy Oxford main lines. This also creates extra capacity not just for passenger trains but also importantly for freight. Oxford is highlighted as a key freight location in the Strategic Freight Network. The bay platform also has passive provision for a second platform face and electrification, providing Oxford capacity to cope with sustainable growth in the future.

Progress in 2009/10

- consultation with the public and stakeholders has taken place and received, in the main, positive responses. It has also been reported positively in Oxford media; and
- pre planning committee meetings have been held and the scheme is making a submission for Prior Approval to Oxford City Council (using our Permitted Development rights).

This project has a completion date of December 2011 and the project is on target to meet that date.

Programme ID 2.00 National Stations Improvement Programme (NSIP)

Current Project Stage: Various

The National Stations Improvement programme (NSIP) is a joint rail industry initiative involving Network Rail, Train Operating Companies and the Department for Transport. The programme is funded primarily by the Department for Transport and aims to deliver £165 million worth of station improvements to a minimum of 150 medium sized stations in England and Wales during CP4. In many cases this funding has been supplemented by contribution from Train Operators, Local Authorities and other interested parties raising the potential provision by around £50 million. Since the programme began £24 million of third party funding has been identified and 289 projects identified.

The programme adopts a new approach to the working partnership between Network Rail and the TOCs. Through the formation of Local Delivery Groups (LDGs) the programme encourages and empowers the LDGs to make decisions at a local level. The LDGs are jointly chaired by Network Rail and the TOCs.

Our obligation is to work with stakeholders to identify the best use of available funds and to deliver the proposed programme of station works delivered by the cross industry local delivery groups, this obligation can be discharged by the TOCs or third parties delivering projects where agreed by the LDGs. LDGs integrate their plans with, and gain synergies from, other programmes of work to deliver the right and efficient overall solution for each station.

The core objective is to achieve a noticeable improvement to the passenger perception of stations by focussing on high footfall, low passenger satisfaction stations. A wider aim of the programme is to develop a more effective, co-ordinated approach for the planning and delivery of activities at stations by all stakeholders, thereby improving efficiency and value for money in station investments.

As the programme develops the scope of NSIP works has evolved beyond the initial "high street" type works to more complex schemes. For the completed projects the scope has included new customer information screens, cycle facilities, seating, signage, waiting shelter improvements, new canopies, new station buildings, booking hall refurbishments, and subway improvements.

In CP3 17 LDGs were established and 266 projects started in development.

Progress in 2009/10

- completed projects at the following stations: Ashford International, Betwys y Coed, Bodorgan, Carmarthen, Dolwyddelan, Grimsby, Hall Road, Hersham, Hitchin, Hooton, Llanfairfechan, Llanfair PG, Meols, Mexborough, Mill Hill Broadway, Northallerton, Ormskirk, Potters Bar, Rhosniegr, Runcorn,Selby, Severn Tunnel Junction, Smitham, Staines, Ty-Croes Valley, Waterloo – Merseyside, Uckfield

Examples of the work undertaken:

Mexborough Station NSIP (Northern Rail)

Current Project Stage: Scheme Handback

The NSIP scheme at Mexborough delivered a number of small items, which combined are intended to make a significant improvement to passenger facilities at the station.

The scheme was delivered by Northern Rail, and work included:

- improved pedestrian access to the station (a dedicated walkway from street and car park to station entrance, and traffic calming measures to improve safety);
- refurbishment of main station waiting room (reupholstering of seats, new ceiling tiles);
- replacement of seating and signage;
- installation of two new waiting shelters;
- refurbishment of waiting room on Platform 1 (vitreous enamel panelling to walls, new heater, new seating, new door);
- improvements to footbridge (tactile strips, redecking, additional lighting and double height handrails); and
- relocation of and improvements to cycle parking, including CCTV.

The handback inspection was undertaken on programme in December 2009, with snagging completed in January 2010. The scheme was brought in under budget. These savings have been reinvested into further work at the station, alongside a package of improvement work funded by South Yorkshire Passenger Transport Executive.

Middlesbrough Station NSIP (First TransPennine Express)

Current Project Stage: Scheme Handback

The NSIP scheme at Middlesbrough commenced on site in January 2010, with its purpose to carry out a complete renovation and refurbishment of a disused café within the station building. The scheme was supported and part-funded by Railway Heritage Trust.

After making repairs to extensive dry rot and damage to the roof (funded from Network Rail renewals budget), the scheme was completed on programme in March 2010. The café opened for business in mid-April 2010.

Smitham Station NSIP (Southern)

Current Project Stage: Scheme Handback

The NSIP project looks to replace an unsuitable station facility with a modern fit for purpose station building. Specifically the scheme delivered:

- a full station upgrade so that the whole station appears clean and modern;
- a building structure that is more easily maintained and more vandal resistant;
- increased seating provision;
- increased cycle parking capacity; and
- Access for All compliance.

This station building project was completed in March 2010.

Streatham Hill Station NSIP (Southern)

Current Project Stage: Construction, testing and commissioning

The NSIP scheme looks to improve passenger circulation when passengers arrive at the station. Specifically this project delivers:

- remodelled and enlarged station booking hall incorporating underutilised space occupied by adjacent retail tenancies located within the station building;
- accommodates the installation of ticket gating (externally funded);
- improves retail facilities within the booking hall that better match passenger requirements;
- new DDA compliant ticket windows;
- a booking hall facility that is more easily maintained and more vandal resistant; and
- improved passenger platform waiting facilities.

This project has a completion date of July 2010 and the project is on target to meet that date.

Programme ID 3.00 Strategic Freight Network (SFN)

The Department for Transport (DfT) announced in its HLOS (July 2007) funding to facilitate the implementation of a Strategic Freight Network. It will add capacity and capability to the network in CP4 to allow an increase in the number of freight trains along with larger loading gauge and longer trains. This is delivered by five schemes, detailed below, which each provide an enhancement for freight customers. These have been developed with the Strategic Freight Network Steering Group. This comprises the freight operating companies and freight users, the Association of Train Operating Companies (representing passenger operators), DfT, Wales Assembly Government and Transport Scotland.

Felixstowe to Nuneaton freight capacity project. Programme ID 3.01

Current Project Stage: Single Option Development

The provision of two key physical interventions was identified in the completion of option selection study complete March 2009, as follows:

- provision of a bi-directional chord line between the East Suffolk Line and Great Eastern Main Line known as 'Ipswich Chord' to enable cross-country intermodal trains to bypass Ipswich Yard; and
- provision of two 775 metre loops on the east side of Ely station (towards Soham) for regulation of intermodal freight trains heading towards Peterborough over Ely North Junction and towards Ipswich over the single line section to Soham.

Progress in 2009/10

- the cost/scope/outputs of the project have been confirmed and baselined to provide the physical interventions described above;
- single option development authority was obtained in August 2009, following which a design consultant was appointed and single option development commenced; and
- activities beginning the process for the Development Consent Order application to the Infrastructure Planning Commission, including environmental surveys and pre-consultation with the local authorities, were commenced.

This project has a committed delivery milestone of completion by March 2014 and the project is on target to meet that date.

Milestones for ID 3.01

Activity/ Output	*Date*	*Date Met / Expected*
Single option development authority	September 2009	August 2009

Southampton to West Coast Main Line W10 / W12 Diversionary Route via Andover Programme ID 3.02

Current project stage: Single Option Development

This project delivers a W10 Diversionary Route between Southampton and Basingstoke to enable intermodal traffic to run without disruption whilst maintenance and renewal takes place on the core route via Eastleigh. The identified scope of the project includes works to 14 overbridges, three footbridges, seven overbridges and track works at nine sites.

Progress in 2009/10

- the project has successfully completed option selection with an option selected to deal with each identified foul structure on the route;
- an estimate was supplied to the client to deliver W10 and W12 gauge on the route enabling the decision to be made to proceed with the development of W10 and W12 gauge; and
- possessions have been identified to deliver the identified works and input into Rules of the Route for agreement with passenger and freight customers.

No milestones were committed to be delivered last year. However, the project had a committed delivery milestone of completing option selection by June 2010. This was delivered early in March 2010. Single option development is programmed for completion in December 2010.

This project has a committed delivery milestone of completion by March 2013 and the project is on target to meet that date.

Channel Tunnel south of London route fund. Programme ID 3.03

The Channel Tunnel south of London route fund currently has two component projects; Channel Tunnel 2nd route and Redhill to Reading London Orbital freight study.

Current Project Stage: Pre-feasibility

The output of the Channel Tunnel 2nd route is to provide an alternative route for freight between the Channel Tunnel and Willesden which is both clear for W9 gauge and Class 92 haulage, in addition to the single route currently available via Maidstone East. This will provide an alternative route during times of maintenance and renewals on the current route. The route being considered in this project is Dollands Moor – Ashford – Tonbridge West Junction – Redhill – Selhurst – Streatham Common – Balham – Clapham Junction – Latchmere Junctions and the West London Line to Willesden.

The output of the Redhill to Reading London Orbital project is to provide a study into a 3rd route for freight between the channel tunnel and markets north and west of London that is both clear for W9 gauge and Class 92 haulage. In addition to the route currently available via Maidstone East and the output being delivered in the Channel Tunnel 2nd Route project (above). The route being considered in this project is Redhill – Guildford – Farnborough North – Wokingham – Reading.

Progress in 2009/10

- remits agreed with the Strategic Freight Network Steering Group; and
- pre-feasibility studies have commenced.

No milestones were committed to be delivered last year.

The projects are to be completed within CP4 and are on target to meet that date.

In-fill gauge projects fund. Programme ID 3.04

The Infill gauge projects fund currently has three component projects.

Water Orton to Doncaster Rail Gauge Enhancement

Current Project Stage: Single Option Development

This project will provide W10 and W12 gauge between Water Orton and Doncaster via Castle Donnington, the Erewash Valley and Beighton Junction. It will connect South Yorkshire and the East Midlands to the existing and planned high gauge routes that extend to/from the West Midlands.

Progress in 2009/10

- the cost/scope/outputs of the project have been confirmed and baselined to clear 59 foul structures to provide both W10 and W12 gauge;
- an opportunity to add an additional output to the project at zero cost has been identified and confirmed. This will see the route section from Wichnor Jn to Lichfield Trent Valley certificated as being clear to both W10 and W12 gauge which will provide a high gauge route from the Water Orton – Doncaster corridor to and from North West England via the West Coast Mainline; and

- an opportunity has been identified to clear a foul structure in 2011 at Castle Donnington. The works to reinstate a connection to the Castle Donnington Freight Terminal will be combined with a track lower, which will provide a cost saving to the project and avoid additional possessions.

No milestones were committed to be delivered last year.

This project is to be completed within CP4 and is on target to meet that date.

London to Peterborough via the Hertford Loop on the ECML ("ECML South")

Current Project Stage: Single Option Development

This project will provide W10 and W12 gauge on the southern end of the East Coast Mainline, including the links to the North London Line in both an east and westbound direction. The main functionality of this project is to provide a high gauge diversionary route for intermodal traffic to/from Felixstowe when the route via March is unavailable.

Progress in 2009/10

- the scope and outputs of the project have been confirmed and baselined to clear 20 foul structures to provide both W10 and W12 gauge; and
- single option development site surveys and investigations have commenced.

No milestones were committed to be delivered last year.

This project is to be completed within CP4 and is target to meet that date.

European gauge from Exchange Sidings near Barking to terminals in the vicinity

Current Project Stage: Pre-feasibility

This project will provide European Gauge, (called "UIC GB1"), from High Speed 1 to a number of freight terminals in the Barking/Dagenham area. This will for the first time enable freight customers to run European gauge freight trains between the continent and these UK terminals in east London.

Progress in 2009/10

- the output definition study was completed in January 2010.

No milestones were committed to be delivered last year.

This project is to be completed within CP4 and is on target to meet that date.

Train lengthening projects fund. Programme ID 3.05

Current Project Stage: Pre Feasibility

The train lengthening projects fund currently has three component projects these are:

- Felixstowe to Nuneaton via London;
- Southampton to the West Coast Mainline; and
- Peak Forest and Hope Valley to London and the South East.

The projects are examining the intervention required to deliver the capability to run longer freight trains of 775 metres long on those three routes and considering the incremental enhancement to 640 metres from the current length.

Progress in 2009/10

- pre feasibility has been completed for each of the projects identifying the options for lengthening up to 775 metres for feedback to the Strategic Freight Network Steering Group.

No milestones were committed to be delivered last year.

This project is to be completed within CP4 and is on target to meet that date.

Programme ID 4.00 Performance Fund

Current Project Stage: Various

The overall objective of the fund is to facilitate performance improvement activity to deliver performance levels beyond that anticipated to be achieved by our core asset management policies and enhancement projects in order to deliver the performance targets required by the 2008 Periodic Review.

A programme approach is taken to authorisation of schemes for funding. The detailed control process provides funding by area based on the measured challenge of delivery whilst also maintaining a broad based approach which:

- enables and focuses attention on performance by all parties which can influence good train performance;
- is responsive to change in the challenge of overall delivery;
- encourages innovation and the transfer of good practice; and
- brings consistency to business case consideration across all possible improvement activities to enable sound prioritisation of projects.

Business cases are prepared based on the forecasted benefits in core outputs of Public Performance Measure (PPM) and Cancellations and Significant Lateness (CaSL), with recognition of other performance benefits where appropriate.

Progress in 2009/10

Following a slight delay in approvals whilst teams adjusted to new processes and business case arrangements, delivery in 2009/10 has seen a migration away from traditional performance improvement projects towards a more holistic approach sought in developing the fund management process; for example:

- increase in TOC delivered projects;
- refocus of projects towards structural fixes (e.g. some signalling changes to increase train flow efficiency);
- some programme approaches (e.g. Thames valley fatalities – a mix of short, medium and long term initiatives); and
- mitigation of new impacts (e.g. Kent High Speed 1 services).

Approval processes have also developed during the year to clarify processes and gain efficiencies and guide investment to new areas, challenging both overall delivery (i.e. tracking overall outputs) and decrease costs.

One hundred and seventy five schemes to a value of £26 million are underway with a further £34 million of schemes identified and being evaluated and a further £20 million of schemes in the pipeline. Examples of schemes are:

- flood mitigation at Water Orton;
- signalling improvements;
- campaign change to jumper cables on high speed trains;
- cable theft mitigation works;
- drop tables in depots to enable more efficient working on trains;
- electrical surge protection in Anglia; and
- conversion of insulated block joints (IBJs) to higher quality specification.

A further portfolio of initiatives is expected in 2010/11 with a range of ease of application and benefits, with process objectives migrating towards more risk management and a more integrated approach to performance management.

Programme ID 5.00
Seven Day Railway

Current Project Stage: Option selection

The funding is to support delivery of the regulated output measures for Network Availability during CP 4. These are measured by the Possession Disruption Indices (PDI) for passenger and freight (PDI-P and PDI-F).

A set of guidelines and principles for the use of the seven day railway fund has been established with the seven day railway governance group (the industry body that provides support and guidance on Network Availability issues). These principles allow that the seven day railway fund is used for projects that help to improve the PDI measures, reduce disruption to our passenger and freight customers and enable our customers to operate services at times when there is a demand for these services.

We have consulted with the Train and Freight Operating Companies to understand their requirements and identify where there may be an opportunity to invest from the seven day railway fund to meet these requirements.

Progress in 2009/10

- over 30 projects have been identified and have authorised funding for option selection with 6 of the projects progressing onto single option development and beyond;
- the projects cover a wide variety of interventions which allow access to the network to remain open for longer periods of time, so improving the journey experience to service users. These projects include improvements to assist maintenance activities such as additional access points, junction lighting, improved isolation points, introduction of new plant, infrastructure enhancement such as the provision of an additional platforms, additional crossovers, turn back facilities as well as timetable studies to identify opportunities for implementing single line working;
- during the course of the year additional requirements to meet the Route categorisation commitments to the Department for Transport were introduced and incorporated into the Network Availability plans. A Network Availability Implementation Plan was published in September 2009 and an updated version two published at the end of March 2010;
- leading on from this we have now developed jointly with our customers a Joint Network Availability Implementation Plan (JNAPS) and these will be updated annually;
- levels of disruption to both passenger and freight services from planned engineering work have continued to reduce throughout the year. At the end of 2009/10 the disruption indices were already better than the regulatory requirements for the end of the control period; and
- each period we publish to the industry a report called the Possession Indicator report. This report contains measures around a number of metrics related to possessions and disruption to services. The key metrics have all shown an improvement during 2009/10.

Programme ID 6.00
CP5 Development Fund

This fund exists to develop candidate projects for CP5. An example of one project which benefits from this fund is:

Network Electrification Programme

Current Project Stage: Pre-feasibility

In July 2009 the Department for Transport (DfT) published Britain's Transport Infrastructure: Rail Electrification, confirming government support for a programme of electrification. The projects supported were the Great Western Main Line (to Bristol, Oxford, Newbury and Swansea) and Liverpool – Manchester via the Chat Moss route.

A further DfT announcement in December 2009 indicated support for electrification of the Lancashire Triangle, incorporating routes from Huyton – Wigan, Preston – Blackpool and Deal Street Junction to Euxton Junction. Taken together with the existing Liverpool – Manchester project, this comprises a rolling programme of electrification projects in the North West.

No milestones were committed to be delivered last year.

Progress in 2009/10

- development of both programmes has commenced, with good progress towards completing pre-feasibility;
- development of high output delivery concept, including specification for high output train; and
- inclusion of Lancashire Triangle in programme.

Programme ID 7.00
Safety and Environment Fund

Network Rail's funding in CP3 included a fund for safety and environment enhancements to meet legal requirements. As some of the projects initiated would not complete until CP4 a roll- over of funds was provided in the PR08 settlement. Our objective is to deliver the remaining projects authorised from this fund.

Current Project Stage: Various
Projects within this fund come under 11 categories

1. **Energy Efficiency**
   - *On-train metering.*
     By providing this facility to train operators they are able to opt to use it to measure their trains' actual use of electricity and thereby understand what measures can be adopted to improve and minimise consumption. The project is aiming to go live in the autumn 2010.
   - *Non- traction metering.*
     This is the provision of around 5500 automatic electricity meter readers.
   - *Carbon reduction strategy.*
     There are plans for 15 managed stations, 6 maintenance depots and 1 training centre. Business cases for investment in the various options are now being reviewed and our programme will be aligned with planned development so that we can time the implementation of the change to provide best economic benefit.
   - *Photovoltaic cells on Blackfriars Station roof.*
     The Blackfriars station redevelopment, due for completion in early 2012, is scheduled to be one of Network Rail's first major projects to incorporate the large scale use of Photovoltaic (PV) cells. It is intended that the PV cells will form part of the station roof design and supply up to 70 percent of the station's electrical needs. Excess electricity will be fed back into the national grid.

2. **Environment protection**
   - *Pollution prevention.*
     Work undertaken as part of the National Pollution Prevention Programme.
   - *Sites of special scientific interest*
     This project aims to bring twenty one Sites of Special Scientific Interest in England to favourable or recovering status during 2010.
   - *Lineside vegetation and habitat management.*
     This programme will identify biological planting solutions and management options to mitigate/prevent risks to the operational railway. During 2009/10, ten pilot sites with associated key risks were identified across the UK. The next phase of work is ongoing to develop the solutions in order to plant out during 2010/11. These solutions will be trialled and monitored between 2010 and 2016. If considered successful, these solutions and management options would be rolled out nationally.

3. **Infrastructure failure**
   - flood mitigation works to Peascliffe Tunnel, completed in 2009/10;
   - scour protection work to Hampole Dyke, completed in 2009/10; and
   - improvements to the design of switches and crossings continues into 2010/11.

4. **Level crossing closure**
   - 24 projects underway, most of which will continue into 2010/11 and beyond, due to the timescales associated with obtaining the necessary closure permissions; and
   - National User Worked Crossing (UWC) level crossings closure programme which, in 2009/10, had successfully closed 200 UWCs with a further 200 in the process of closure.

5. **Passenger safety**
   - trap point mitigation works on the North Eastern area, completed in 2009/10;
   - the installation of enhanced security cameras on 30 First Great Western leased stations, completed in 2009/10; and
   - trap point mitigation works on the Great Northern area which continues into 2010/11.

6. **Route crime**
   - installation of forward facing cameras on rolling stock leased to Virgin Trains, completed in 2009/10;
   - installation of forward facing cameras on rolling stock leased to Northern Rail continues into 2010/11; and
   - a programme of demolition of redundant lineside buildings, completed in 2009/10.

7. **Security**
   - improvements to the CCTV Control Hub at British Transport Police's headquarters, planned for completion in 2011/12;
   - a national programme of installation of enhanced security measures at key operational locations, scheduled for completion in 2011/12.

8. **Signals Passed At Danger (SPADs)**
   - projects are being processed.

9. **Vegetation management**
   - a national lineside tree survey is underway and continues into 2010/11.

10. **Workforce safety**
    - 7 enhancement projects are underway and mainly comprises programmes of work to reduce the risks of working at height or slips, trips and falls and mostly continue into 2010/11; and
    - one of the projects, completed in 2009/10, made changes to our fleet of Osprey wagons, thereby reducing the risk of falling from such rail vehicles.

11. **Workforce health**
    - this includes the motorisation of signal levers, to reduce the risk of musculoskeletal injuries associated with heavy mechanical signal lever pulls and which continues into 2010/11.

Programme ID 8.00 Access for All

Current Project Stage: Various

The objective of the Access for All Programme is to deliver an accessible route at as many stations as possible. The locations have been selected for consideration by the Department for Transport for England and Wales, and Transport Scotland for Scotland, 135 and 13 respectively.

Our obligation is to deliver projects that are authorised to draw down from the Access for All fund which is scheduled to run into the first year of CP5. The programme delivered enhancements at 23 stations in CP3 and is, subject to draw forward of CP5 funding, in a position to complete another 125 in CP4. During 2009 we discussed with the Department for Transport and the Office of Rail Regulation our aspiration to complete the programme within CP4 and that aspiration is still being considered by the Office of Rail Regulation. In this financial year we reviewed the whole programme along with the industry's Integrated Station Plans, the National Stations Improvement Programme and station renewals. This was done to make sure that synergies and opportunities are exploited and our customers' business needs are impacted as little as possible, with their views and issues incorporated. As a result of this the programme of completions in the year was delayed and so instead of the planned 25 completed stations we completed 18. However now that that review is complete we are on schedule to complete the full programme by the end of CP4 if our stakeholders so wish.

Station specific outputs

For each station identified we must achieve an unobstructed and obstacle free "accessible route" within Network Rail controlled infrastructure, from at least one station entrance and all drop off points associated with that entrance, to each platform and between platforms served by passenger trains.

Scope of works

This will be decided on a station by station basis but will typically be provision of lifts or ramps to an existing, or new, footbridge or subway with the appropriate signage, information systems, non-slip surfaces and colour contrasting handrails as necessary.

Progress in 2009/10

- Option Selections agreed with DfT 13;
- Outline Designs signed off 13;
- Detailed Designs signed off 9; and
- 18 stations completed:
  Audley End, Barrow-in-Furness, Dalmuir, Euston, Fareham, Forest Hill, Fratton, Havant, Lewisham, Motherwell, Southampton Airport Parkway(by Stagecoach South Western Trains), Streatham Common, Shipley, Staplehurst, Streatham Hill, Middlesborough, Three Bridges, Twyford.

Current status

There are 131 remaining sites on DfT/TS list for consideration of which:

- 59 have Option Selections;
- 40 have Outline Design;
- 11 are in contract with 6 on site; and
- 21 further sites planned to start within next 12 months.

England and Wales: Major Projects

Programme ID 9.00 King's Cross

Current Project Stage: Construction, testing and commission

The King's Cross Station Redevelopment Programme is a major redevelopment project covering the complete station including the main line and suburban train sheds, both renewals and enhancements. A key objective of the project is to provide an integrated seamless transport interchange between Kings Cross main and suburban train sheds, incorporated with LUL services (via their new northern ticket hall recently opened below the proposed new station concourse) and with the adjacent St Pancras station. Many elements of the existing station are being updated, modernised and renewed including: the east and west range offices, all station roofs, platforms, and façades.

Enhancements include:

- a completely new western concourse three times the size of the existing one;
- a new platform beneath the eastern range offices;
- a new iconic square to the south of the station larger than Leicester Square; and
- a new access road and service yard for station deliveries in conjunction with the adjacent property developer, Argent.

This project supports an improved network capability through an increased station capacity to handle future passenger forecasts at peak times plus increased train path availability by construction of a new platform.

Other key outputs include:

- creation of a high quality passenger environment;
- improved circulation space and additional facilities;
- increased retail opportunity within the new concourse; and
- additional commercial opportunity by refurbishment of the east and west range offices; maximising the heritage environment within the confines of a Grade 1 listed station.

Progress in 2009/10

Western Range Offices:

- structural remedial and upgrade works and strip out of existing building commenced;
- original fabric of building revealed and renovation works underway; and
- completion of main booking hall façade to allow new concourse steel work to commence.

Western Concourse:

- mezzanine steelwork and first floor concrete slab completed; and
- commencement of main steelwork for the signature concourse roof structure.

Shared Service Yard:

- civils structural works completed to road and service yard.

New Platform (Platform 0):

- operational commissioning of the platform in May 2010.

Roof Refurbishment:

- all main train shed roof access works completed, including the northern access deck, scaffolding and hoists, runway decks and tracks along all three roof valleys, and travelling decks installed within the interior of both roof barrels. This significant amount of work was undertaken to ensure that the station can remain fully operational while works are underway. Refurbishment work started on both barrels.

No milestones were committed to be delivered last year. This project has a committed delivery milestone of completion by September 2013 and the project is on target to meet that date.

Programme ID 10.00 West Coast Main Line committed schemes

Bletchley Re-Modelling Project. Programme ID 10.01

Current project stage: Single Option Development

The purpose of the project is to renew signalling and track assets in the area of Bletchley station and the nearby carriage sidings. It also supports the provision of capacity enhancements which contribute to the delivery of DfT's HLOS strategy.

Progress in 2009/10

- successfully completed all single option development activities;
- achieved the March 2010 milestone for the completion of single option development following sign off the Stage Gate Review; and
- delivered line speed improvements on the up fast line through Bletchley station in January 2010, three months ahead of schedule.

This project has a committed delivery milestone of completion by September 2013 and the project is on target to meet that date.

Milestones in the year for ID 10.01

Activity/ Output	*Date*	*Date Met / Expected*
Commence Network Change	June 2009	May 2009
Removal of fixed diamond from Bletchley South Junction	September 2009	June 2009
Completion of single option development	March 2010	March 2010

West Coast Power Supply Upgrade. Programme ID 10.02

Current project stage: Option Selection

The scope of the overall programme is to deliver an upgraded traction power supply system to support the operation of the DfT specified 2020 timetable for the WCML. This project will be submitted for change control to reflect the changed phasing during this year.

Phase one was completed in time for the December 2008 timetable change. Phase two is substantially complete with some residual works now due for completion by November 2010. Phase three is the implementation of an upgraded traction power supply across the balance of the route and is to be completed during CP4 and CP5. It will renew and upgrade the remainder of the 25kV power supply equipment on the WCML between North Wembley and Carstairs with an upgraded Autotransformer traction power supply and distribution system.

Progress in 2009/10

- a number of Option Selection Reports have been undertaken during the past year, specifically; Protection & Control Study, Distribution Equipment Study and Overhead line equipment study;
- the project has undertaken a trial to validate the proposal to move to a system design with 12kA fault level. The 12kA trial has been undertaken between Patford Bridge / Long Buckby Wharf and Hillmorton and the results are now being reviewed with a view to the roll-out of 12kA on other projects / parts of the network; and
- the DfT has provided an updated train service specification which will be subject to a load modelling assessment. The assessment is to be undertaken in 2010/11 and has been jointly remitted with the North West Electrification project.

Milestones in the year

- single option development is planned to start in August 2010;
- the intermediate phasing of the project has been subject to review and the current milestone plan sees the project undertakes in three phases:
  - North Wembley to Whitmore (incorporating; North Wembley to Ashton, Hillmorton to Tamworth, and part of Brereton to Crewe);
  - Whitmore to Oxenholme (incorporating part of Brereton to Crewe);
  - Great Strickland to Carstairs; and
- the intermediate milestones are subject to further review following analysis of more recent condition surveys and once the detailed requirements of the North West Electrification project are known.

This project has a committed delivery milestone of completion by 2019 and the project is on target to meet that date.

Milestones in the year for ID 10.02		
Activity/ Output	***Date***	***Date Met / Expected***
Commence option selection	June 2009	June 2009

Stafford Area Improvement Project. Programme ID 10.03

Current Project Stage: Option Selection

The project supports the implementation of a new timetable on West Coast Mainline through the provision of additional fast line capacity at the south end of the route, additional freight capacity and additional capacity on the Birmingham – Manchester axis.

Progress in 2009/10

- during the course of the year the project has re-evaluated the need for a new line solution which formed the basis of the outputs and milestones in the CP4 Delivery Plan;
- in agreeing an indicative timetable with Department for Transport, it has been possible to develop and model a number of infrastructure interventions during pre-feasibility, which are less expensive and less intrusive than the previous infrastructure options. A package of options has been developed which has been taken forward into the option selection stage in January 2010 for more detailed development and analysis;
- the project will now deliver the required outputs through a combination of line speed enhancements, a freight recess facility and by addressing the conflicts at Norton Bridge; and
- the project is in the process of re-stating CP4 Delivery Plan milestones through the formal Delivery Plan Change process. It is on target with the re-stated milestones if the change control is agreed.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by December 2018 but we are planning to complete it by December 2017.

Programme ID 11.00 Thameslink

Current Project Stage: Various

The Thameslink Programme will provide the stations and railway systems to enable modern 12-car trains to travel from Bedford, Peterborough and Cambridge to destinations such as Brighton, Horsham, East Grinstead, Sevenoaks and Maidstone East through a central London core at a peak rate of up to 24 trains per hour. The scope of works to achieve this are grouped into three key outputs.

Key output zero (KO 0) to allow a consistent train service to run throughout the Thameslink Programme construction periods was completed in March 2009.

Key output one (KO 1) provides an improved train service capacity of up to 16 train paths per hour between St Pancras International (low level) and Blackfriars stations and allows 12 car train length operation between Bedford and Brighton by December 2011 and is currently on target to deliver that output.

Key output two (KO 2) provides for the complete Thameslink service giving a further improved train service of up to 24 train paths per hour between St Pancras International (low level) and Blackfriars stations by December 2015. This milestone is currently under review and will be subject to change control in due course.

These are some of the key projects in this programme.

N280 Outer Areas

To extend platforms and enhance stations to accommodate 12-car trains from the introduction of the KO 1 timetable and to manage passenger numbers to KO 2 and beyond.

This encompasses works at Bedford, Radlett, Harlington, Flitwick, Elstree & Borehamwood, Luton, Harpenden, St Albans, West Hampstead, Mill Hill Broadway and Luton Airport Parkway stations. Project sites require multidisciplinary coordination including all railway systems disciplines as well as station, rail bridge and passenger footbridge installations.

N222 Farringdon Station

Farringdon Station is being remodelled to accommodate increased passenger numbers and improve existing interchanges with London Underground and a new interface with Crossrail.

The project will deliver a new station entrance and concourse from Turnmill Street, an extension to the pre-existing LU concourse and a new station entrance and concourse on Cowcross Street.

N221 Blackfriars Station

The Blackfriars Station and Bridge Project involves the re-development and expansion of the existing station complex. The station will be enlarged with a new north bank concourse and station building, new widened 12-car platforms spanning the River Thames and a brand new south bank station entrance. All four platforms will be covered by a new single east-west span roof above their entire length. Blackfriars Underground station will be enlarged and extensively rebuilt with new escalators, lifts and improved customer and staff facilities.

N232 Borough Viaduct Project

The project will provide a new twin-track viaduct on the south side of the existing tracks to facilitate the provision of four tracks through the existing 'bottlenecks' between London Bridge and Metropolitan junction. This will allow Thameslink and Charing Cross services to operate over dedicated tracks improving capacity and reliability.

N231 London Bridge Station Redevelopment

Optioneering is taking place to find a station design solution within the available budget to satisfy a future passenger demand increase of 35 per cent over the predicted 2016 figures. The project must be compatible with the requirement for 18 Thameslink trains paths per hour through the station and a total of 86 trains per hour into and through the station as a whole.

Progress in 2009/10

- Farringdon:
  - demolition of Cardinal Tower to assist construction of Integrated Ticket Hall;
  - a new passenger footbridge has been constructed and brought into use; and
  - Fleet sewer diversion works commenced.
- Blackfriars:
  - platform 4 and 5 temporary over-bridge;
  - platform 4 and 5 extensions;
  - commencement of South Station Construction; and
  - completion 410E Bridge Slide.
- Borough Viaduct:
  - removal of Borough Market roof completed; and
  - construction of a new extension to Borough Market (Jubilee Market).
- London Bridge:
  - a series of options have been considered for the new station; there are currently two principal design concepts under extended development.

Milestones in the year for ID 11.00

Activity/ Output	*Date*	*Date Met / Expected*
Farringdon Footbridge	June 2009	June 2009

Programme ID 12.00
Intercity Express Programme (IEP)

Current Project Stage: Various: Feasibility to Outline Design

The Intercity Express Programme (IEP) will deliver infrastructure ready to accept the operation of the new Intercity Express trains allowing for the replacement of some existing trains on a 'like for like service' basis i.e. no increase in service levels. The trains are being procured under a "train service provision" (TSP) contract by the DfT which is informed by the Network Rail IEP Train Infrastructure Interface Specification. For CP4, the total funding covers the implementation works on the East Coast route and development and detailed design on the Great Western route.

This project has a phased delivery date in line with the Department for Transport (DfT) rolling stock deployment strategy commencing on East Coast Main Line (ECML) in March 2014 and finishing on Great Western Main Line (GWML) in July 2016.

This project is now subject to a Treasury led value review.

Progress in 2009/10

- ECML Traction Power Upgrade completed feasibility study concluding that auto transformers are required along sections of ECML to support future growth;
- ECML platform extensions completed option selection for platforms between London and Newcastle;
- ECML overhead line equipment booster overlaps and neutral sections completed feasibility study, confirming the need for further development of either operational or infrastructure solutions at specific locations;
- ECML gauge clearance continued to progress in option selection;
- GWML Infrastructure Capability works continued to develop through feasibility; and
- Baseline 2 Report published in October 2009 summarising progress to date in order to support the DfT's development of the business case.

Milestones in the year

East Coast test was delayed due to traction power modelling taking longer than anticipated. This has not impacted on subsequent implementation milestones. East Coast series routes have changed because the strategy for approaching Distribution Network Operators (DNO) and the National GRID has changed. The agreed national strategy is now to undertake feasibility before submitting connection applications and engaging with DNO. This delays the milestones but shortens the subsequent programme so final completion milestones are unchanged.

This project has a committed delivery milestone of completion of the ECML works by September 2014 and significant implementation of GWML works by September 2015. The projects are on target to meet those dates.

Milestones in the year for ID 12.00

Activity/ Output	*Date*	*Date Met / Expected*
Receipt of preferred bidder's kinetic envelope	March 2010	February 2010
East Coast test. Validation of the capability of the existing traction power supply to support the proposed 2013 timetable.	December 2009	February 2010
East Coast pre series Engagement of DNO for provision of new supply connections at Tallington and Newark.	March 2010	March 2010
East Coast series routes. Validation of the capability of the reinforced traction power supply to support the proposed 2015/16 timetable.	March 2010	March 2010
East Coast series routes. Engagement of DNO for provision of additional supply connection at Ardsley.	March 2010	December 2011

Programme ID 13.00 Crossrail and Reading

Crossrail and Reading are two separate projects, with different objectives and clients. Both projects, however, have the potential to provide significant improvements to the Great Western Main Line (GWML). As there are opportunities to share access time and resources during implementation, a single team was established, the Crossrail and Reading Programme team, to deliver these two important schemes in the most effective way benefiting from those synergies. This team also includes the Western Integration team, responsible for coordinating these projects with others on the GWML as there are multiple interfaces between Crossrail Surface works and other Network Rail projects.

Crossrail. Programme ID 13.01

Current Project Stage: Various

Crossrail is a third party funded project which links Maidenhead and Heathrow Airport in the west with Shenfield and Abbey Wood in the east. It includes 23 km of sub-surface railway tunnelled beneath the centre of London.

Network Rail is delivering the Crossrail Surface works (formerly known as the On Network Works (ONW)) for Crossrail Limited (CRL), the scheme promoters. Crossrail Surface comprises the enhancements to the existing railway network, on either side of the tunnels, necessary to deliver the timetable and performance levels required by DfT and TfL, the joint sponsors of Crossrail.

The requirements on Network Rail are set out in the Network Rail Client Requirements which also incorporates the On Network Functional Requirements. Within these documents CRL sets out the infrastructure capability which is needed to operate the Crossrail train service described within their Access Option.

We are also delivering various directly cash funded works for CRL. These are enabling works necessary to support the commencement of tunnelling (for example the relocation of equipment cases at the portals) and are not included in the outputs given in the Delivery Plan.

Scope of works

Crossrail Surface comprises the following infrastructure enhancements along 76 km of existing railway:

- platform extensions for stations from Maidenhead to Abbey Wood and Shenfield to cater for 200m long electric trains;
- improvements at stations to cater for the increased numbers of passengers;
- new station at Abbey Wood;
- doubling the capacity of Stockley Viaduct at Airport Junction to improve access to Heathrow Airport;
- providing a grade separated junction at Acton; and
- other operational improvements including freight loops and turn back sidings to support the timetable.

Progress in 2009/10

- in November 2009 the ORR established the Regulatory Protocol for Crossrail which describes how Network Rail will deliver the Crossrail Surface works and how these enhancements will be funded. The Protocol requires Network Rail to submit a target price for Crossrail Surface in September 2010;
- to support of the wider programme enabling works have been undertaken at Royal Oak;
- enhancements to the Abbey Wood Station have been put out to tender as a single package;
- we appointed Bechtel as our delivery partner bringing major programme experience to the programme; and
- 30 per cent of projects have completed their option selection reviews, including Acton and Stockley.

Milestones in the year

In September 2009 an initial estimate for the Crossrail Surface works was submitted. This was then value managed with CRL to support a reduction in that estimate. This work was successful and resulted in an 11 per cent reduction in cost; however the need to undertake the value management work has meant that the milestone to complete the option selection stage gate review by March 2010 has been delayed until November 2010.

Milestones in the year for ID 13.01

Activity/ Output	*Date*	*Date Met / Expected*
Initial costing for On Network Works	June 2009	September 2009
Complete option selection stage gate review for On Network Works	March 2010	November 2010

Reading Station area redevelopment and southern platforms. Programme ID's 13.02 and 13.03.

Current Project Stage: Single Option Development

Reading station area redevelopment is designed to deliver significant capacity and performance improvements throughout the area for GWML and cross country passenger and freight services. The southern platform project is an integral part of the redevelopment project and is required to support the proposed plan to operate 12 car services on the Waterloo lines. This programme has a number of assumptions including the provision of funding in CP5.

The outputs required are that there will be a minimum of four additional train paths per hour in each direction, six additional platforms (5 new and 1 bought back into use), 125 per cent improvement on through line platform capacity and 37 per cent improvement in train delay minutes.

Scope of works

- new Thames Valley signalling centre replacing the Reading signal box;
- new platforms and platform extensions;
- new train maintenance facility replacing existing facilities;
- grade separation to allow trains to cross the GWML;
- extensive track layout reconfiguration and resignalling throughout the area; and
- passive provision for a possible future extension of Crossrail and the introduction of Airtrack.

Progress in 2009/10

- in June 2009 the DfT revised the scope of the new maintenance facility to include the ability to incorporate change in train fleets;
- Transport and Works Order act was successfully enacted in October 2009 thereby securing the lands needed to undertake the project; and
- Consolidated Stage Gate 3 Review for Single Option Development completed in December 2009.

No milestones were committed to be delivered during the year.

This project has various phases of work with the last element (Key output four) due for completion in June 2016 and the project is on target to meet that date.

Programme ID 14.00 Birmingham New Street

Current Project Stage: Detailed design

The Gateway project will redevelop station infrastructure at Birmingham New Street to provide greater capacity for passenger handling to the year 2035 and enhanced facilities. The project is jointly funded by Network Rail, Advantage West Midlands, Birmingham City Council (BCC), Centro and the Department for Transport, with BCC as client.

Progress in 2009/10

- the project has been successfully reviewed by the Commission for Architecture and Build Environment;
- Compulsory Purchase Order confirmed;
- planning permission granted;
- Network Change for West Dock removal agreed and implemented;
- Station Change for full project agreed with affected parties; and
- site works started at concourse and platform level.

Milestones in the year

Detailed design from the contractor was submitted late due to poor access for land surveying and additional time to finalise the architectural designs. This led to a delay in commencing enabling works.

This project has a committed delivery milestone of opening the concourse for use by the public by March 2015 and the project is on target to meet that date.

Milestones in the year for ID 14.00

Activity/ Output	*Date*	*Date Met / Expected*
Enabling works	December 2009	September 2009
Complete Detailed design	March 2010	April 2010
Transfer land to Network Rail	March 2010	April 2010*
Start Phase 1 (West)	March 2010	September 2009

Note: *Access to the land has been granted but the final transfer is dependent upon the vendor. There are no programme issues as Network Rail has sufficient access to the land.

England and Wales: Defined Outputs

Programme ID 15.00 Southern Platform Lengthening

Current Project Stage: Detailed design

The objective of this Government funded and Network Rail delivered enhancement programme is to enable the relevant train operating companies to lengthen services to deliver the HLOS capacity into the following London terminus stations:

- Fenchurch Street, Liverpool Street, Waterloo, London Bridge, Victoria.

The programme involves a total of 290 platform extensions across four routes. In addition there are 37 stations at which will be using either Driver Only Operated (DOO) or Selective Door Opening (SDO).

Selective Door Opening (SDO) is considered where the business case justifies looking for alternatives to a platform extension, for example, at less frequented stations. This is a continuous process and has been done in conjunction with the Department for Transport (DfT) and Train Operators. There is a likelihood that the number of SDO may increase.

The following facilities will be provided on each platform extension: adequate lighting, signage, CCTV and PA coverage and back fences.

The Programme is split as follows:

Programme split for ID 15.00	
Anglia	West Anglia Outer. Cambridge Island Platform. Tilbury & Ockendon Branch
Kent	Kent Train Lengthening
Sussex	Sussex Route Suburban
Wessex	Wessex 10 car suburban. Waterloo to Windsor, Hounslow and Chertsey

Waterloo International Integration. Programme ID 15.01

Current Project Stage: Option Selection and Single Option Development

The project is part of an overall programme to deliver 10-car operations on both the Windsor and Suburban lines into London Waterloo by the end of CP4. This is supported by lengthening platforms at Waterloo station to facilitate 10-car operations into platforms 1 to 4. Additionally, the option to convert Waterloo International Terminal for domestic services has been included within the project scope.

Progress in 2009/10

- option selection works identified that the existing short platforms (platforms 1 to 4) can be extended to 10 car length without the loss of any platforms. Previous work had identified the loss of two platforms in order to create space to extend platforms 3 and 4 to 10 car length; and
- option selection was concluded August 2009 with single option development commencing in October 2009.

This project has a committed delivery milestone of completion by December 2013 and the project is on target to meet that date.

Milestones in the year for ID 15.01

Activity/ Output	*Date*	*Date Met / Expected*
Single Option developed	December 2009	November 2010

Twelve-car capability on the Tilbury Loop and Ockendon branch Programme ID 15.02

Current project stage: Detailed design

This project has a delivery plan milestone of project implementation by December 2011 and is currently on schedule to meet this commitment.

The project's scope is to deliver the necessary infrastructure to allow operation of 12-car trains on the Tilbury Loop and Ockendon branch. This will require platform extensions at the following stations:

- Pitsea;
- Stanford le Hope;
- East Tilbury;
- Tilbury Town;
- Grays;
- Ockendon;
- Purfleet;
- Rainham; and
- Dagenham Dock.

Progress in 2009/10

- single option development completed;
- Network Change established;
- invitation to tender issued for detailed design and implementation; and
- tender review process started.

This project has a committed delivery milestone of completion by December 2011 and the project is on target to meet that date.

Milestones in the year for ID 15.02

Activity/ Output	*Date*	*Date Met*
Invitations to tender	December 2009	October 2009

West Anglia Outer 12 Coach Trains Programme ID 15.03

Current project stage: Single option development

This project has a delivery plan milestone of project implementation by December 2011 and is currently on schedule to meet this commitment.

The project's scope is to deliver the necessary infrastructure to allow operation of 12-coach trains on West Anglia "Outer" services (Liverpool Street to Stansted Airport and Cambridge). This will require platform extensions at the following stations:

- Broxbourne (platforms 2 and 3 only);
- Cheshunt (platforms 1 and 2 only);
- Sawbridgeworth; and
- Stansted Mountfitchet.

The following stations have platforms that are not being extended, but will be made capable of being served by 12-coach trains that have selective door operation (SDO) fitted:

- Broxbourne (platforms 1 and 4, i.e. that are not being extended);
- Roydon;
- Harlow Mill;
- Elsenham;
- Newport;
- Great Chesterford; and
- Shelford.

Progress in 2009/10

- single options for all stations developed and agreed, with significant cost savings identified through value management;
- Network Change established;
- Station Change agreed in principle; and
- outline designs submitted to Network Rail for approval.

This project has a committed delivery milestone of completion by December 2011 and the project is on target to meet that date.

Milestones in the year for ID 15.03

Activity/ Output	*Date*	*Date Met / Expected*
Single Option development Review (Broxbourne)	March 2010	March 2010

Cambridge Island Platform (part of Programme ID 15.03)

Current project stage: Single option development

This project has a delivery plan milestone of delivering at least one new platform face by December 2011 and is currently on schedule to meet this commitment.

This project is to deliver two new platforms at Cambridge (platforms 7 and 8) to support 12-coach train operation on both Liverpool Street and King's Cross services. The platforms will be located on lines currently used by freight trains. Works include minor shortening of platform 5 to allow space for the new lifts and footbridge.

Progress in 2009/10

- single option developed and agreed;
- Network Change established;
- Station Change agreed in principle; and
- outline designs submitted to Network Rail for approval.

This project has a committed delivery milestone of completion by December 2011 and the project is on target to meet that date.

10-car South West Suburban Railway Programme ID 15.04

Programme ID 15.04 includes the following schemes:

Main Suburban Waterloo to Shepperton

Current Project Stage: Single Option Development

Highlights of this programme are:

- extension of 85 platforms across 42 locations; and
- alteration of some railway infrastructure to facilitate 10-car train operation.

This project has a committed delivery milestone of completion by December 2013 and the project is on target to meet that date.

Progress in 2009/10

- the cost/scope/outputs of the project have been confirmed and baselined; and
- single option development authority was obtained in May 2010, following which a design consultant was appointed and single option development commenced.

This project has committed delivery milestones of completion of various dates up to December 2013 and the project is on target to meet those dates.

Waterloo to Windsor, Hounslow and Chertsey lines Train Lengthening

Current Project Stage: Single Option Development

Highlights of this programme are:

- 42 platforms being extended across 19 stations; and
- alteration of railway infrastructure to facilitate the platform extensions such as bridge reconstruction at Richmond and signals and crossing movement at Barnes.

Progress in 2009/10

- single option development has been continued to further clarify design and scope parameters for the scheme.

Milestones in the year

Single option development of the Windsor lines has slipped due to alterations in scope and derogation requirements affecting the design timescales.

This project has committed delivery milestones of completion by various dates up to December 2013 and the project is on target to meet those dates.

Milestones in the year for ID 15.04

Activity/ Output	*Date*	*Date Met / Expected*
Completion of single option development stage 4 Windsor	March 2010	September 2010
Completion of single option development stage 4 Whitton	March 2010	September 2010
Completion of single option development stage 4 Ashford	March 2010	September 2010
Completion of single option development stage 4 Vauxhall	March 2010	September 2010

Clapham Junction Station Capacity and Platform Lengthening. Programme ID 15.05

Current Project Stage: Option Selection

This project provides the capability for 10-car trains to call at platforms 14 and 15 at Clapham Junction.

10-car capability is also required at platform 9 but it has been confirmed that this can be achieved without physical works.

Progress in 2009/10

Option Selection has been completed. Single option development will start in June 2010 and is scheduled for completion in August 2010. The works required to deliver the outputs at Clapham Junction are significantly less complex than originally envisaged and therefore the project will be developed and implemented as part of the Sussex Route Suburban Area (Programme ID15.06).

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by December 2013 and the project is on target to meet that date.

Sussex route suburban area 10-car/12-car operations to Victoria and London Bridge Programme ID 15.06

Current Project Stage: Single Option Development

The project delivers platform extensions at 28 stations along 5 operational routes within the Sussex suburban area. The routes are:

- London Bridge/East Croydon to Victoria via Streatham Hill (10-car capability);
- Victoria to Sutton/Epsom Downs via Norbury (10-car capability);
- Victoria to Horsham/Epsom via Hackbridge (10-car capability);
- Victoria/London Bridge to East Grinstead via Clapham Jn fast lines and Sydenham fast lines respectively (12-car capability); and
- London Bridge to East Croydon/West Croydon via Sydenham slow lines (10-car capability).

There are a number of complex sites within this programme of work which involve significant track and signalling work to accommodate the platform extension works.

Progress in 2009/10

- works have commenced at three stations along the East Grinstead to Victoria/London Bridge route (Oxted, Upper Warlingham and Sanderstead) with completion of all three expected by end July 2010;
- Single Option Development has been completed for the London Bridge to East Croydon/West Croydon via Sydenham slow lines and the Victoria/London Bridge to East Grinstead via Clapham Jn fast lines and Sydenham fast lines respectively. Authority to proceed through to completion will be sought in July 2010; and
- Single Option Development for the remaining routes is due for completion by September 2010.

No milestones were committed to be delivered last year.

This project has a committed delivery milestones of completion by various dates up to December 2013 and the project is on target to meet that date.

Kent Train Lengthening. Programme ID 15.07 to 15.13

Current Project Stage: Outline Design Completed (Gravesend in option selection)

This project provides the necessary infrastructure to facilitate the operational plan assumed with train operators to deliver the HLOS metrics. These works include platform extensions, signal moves (at stations) and modification to the existing train despatch systems to enable 12-car operations.

There are 54 stations included in the scope of the Kent Train Lengthening project. Of these stations 26 only require modification to the train despatch systems to allow for 12 car operations. Of the remainder, there are:

- 15 stations which require a platform extension of between 10 – 40 metres, which includes 6 stations with signal moves;
- 9 stations with extensions of less than 10 metres, which includes two stations with signal moves;
- 3 stations where signal moves are required to release the use of platforms which sit beyond the existing platform starter signal; and
- 1 station (Gravesend) which requires major re-signalling and building of a new platform to create additional functionality provide greater capacity.

This project has a committed delivery milestone of completion by May 2012 for all stations West of Dartford (including Dartford). Those stations east of Dartford, namely Stone Crossing, Greenhithe, Swanscombe, Northfleet and Gravesend are committed for delivery by the end of CP 4. It is likely that out of these five Gravesend construction works will commence in late 2012 but the rest will be completed with the remainder of the Kent Delivery programme (by May 2012) to achieve contracting efficiency.

Progress in 2009/10

- outline design for all stations is now complete for stations in scope (except Gravesend); and
- the project is now in a position to seek authority for detailed design and implementation and will do so in mid to late summer following agreement with the train operators through station and network change.

Milestones in the year

- the programme start date slipped as an alternative delivery method was designed and implemented allowing for a cheaper programme to be introduced; and
- Single option development was commenced East of Dartford two months later than planned, although it is not anticipated that this will impact the agreed completion date.

This project has a committed delivery milestone of completion by October 2012 for the majority of the sites and May 2014 for the Dartford to Rochester route and the project is on target to meet those dates.

Milestones in the year for ID 15.07 to 15.13		
Activity/ Output	***Date***	***Date Met / Expected***
Commence Single Option development ex. East of Dartford	June 2009	September 2009
Complete Single Option development ex. East of Dartford	March 2010	March 2010
Commence Single Option development East of Dartford	September 2009	November 2009

Programme ID 16.00 Power Supply Upgrade

Routes 1, 2 and 3 power supply enhancements: Programme IDs 16.01, 16.03 & 16.04

Current Project stage: Various

Completion will enable longer trains and different rolling stock to operate on the national rail network in Wessex, Sussex and Kent drawing increased quantities of traction power from the direct current third rail system.

The programme relates to train lengthening proposals agreed with Department for Transport for the period to end of CP4 (to end March 2014).

Progress in 2009/10

- completion and review of high level modelling of the power requirement enables more detailed definition and refinement of the scope. The design is being prepared in packages for tendering and delivery. Advance ordering of materials has been arranged for the early work packages and design is progressing for the East Grinstead branch power strengthening to enable a planned change in December 2011.

Milestones in the year

The completion of concept design for projects 16.03 and 16.04 took longer than anticipated because additional high level modelling was required to take full account of additional load on the network imposed by Thameslink and additional train service changes for Kent, Sussex and Wessex.

These projects have committed delivery milestones which are currently under review. Changes in client requirements may mean a later completion date which will be subject to change control in due course.

Milestones in the year for ID 16.01

Activity/ Output	*Date*	*Date Met / Expected*
Completion of concept design	June 2009	May 2009

Milestones in the year for ID 16.03

Activity/ Output	*Date*	*Date Met / Expected*
Completion of concept design	June 2009	Part in May 2009 Remainder: November 2010

Milestones in the year for ID 16.04

Activity/ Output	*Date*	*Date Met / Expected*
Completion of concept design	June 2009	August 2009

Routes 5, 6 and 7 Power Supply enhancements: Programme IDs 16.05, 16.06 & 16.07

Current project stage: Option selection

This project has a delivery plan milestone of project implementation by December 2011 and is currently on schedule to meet this date.

This project will deliver enhancements to existing traction power supply infrastructure required to facilitate the operational plan assumed with train operators to deliver the agreed CP4 capacity metrics.

In summary the capacity metrics for CP4 require additional and lengthened rolling stock on each of the routes, as well as the introduction of new Class 379 rolling stock on Route 5.

Progress in 2009/10

- modelling of the proposed service changes and assessment of the impact on current power supply infrastructure;
- development of potential infrastructure enhancement options;
- selection of preferred options for each route; and
- applications made to Distribution Network Operator for increases in Firm Supply Capacity and quotes for delivery of physical works.

Milestones in the year

Programme ID 16.07

The infrastructure requirements for the Route 7 traction power upgrade are more complex than Routes 5 and 6. A longer period than originally forecast has been allocated to single option selection. This was required to confirm that the chosen option meets the required outputs and is deliverable by the agreed milestone of December 2011. The extra time spent in option selection and the nature of the works has required a reforecast of the outline design milestone.

These projects have committed delivery milestones of March 2012 and the projects are on target to meet those dates.

Milestones in the year for ID 16.05		
Activity/ Output	***Date***	***Date Met / Expected***
Complete programme specification	March 2010	March 2010
Completion of modelling	March 2010	March 2010

Milestones in the year for ID 16.06		
Activity/ Output	***Date***	***Date Met / Expected***
Complete programme specification	March 2010	March 2010
Completion of modelling	March 2010	March 2010

Milestones in the year for ID 16.07		
Activity/ Output	***Date***	***Date Met / Expected***
Complete programme specification	March 2010	July 2010
Completion of modelling	March 2010	March 2010
Complete outline design	March 2010	November 2010

Route 1 New Cross enhancement to power supply. Programme ID 16.02

Current project stage: Option Selection

This project supports an increase in capacity of the network through an increase in power availability allowing the HLOS capacity metric to be achieved in South London, North Kent and Surrey.

The project is to modify and extend National Grid's 275kV substation at New Cross, to provide a replacement to the existing 66kV railway power supply feed which will be decommissioned and life extension of some existing equipment.

Progress in 2009/10

- design is progressing; and
- discussions with National Grid are close to conclusion which will allow National Grid to order the super grid 275/132kV transformers.

This project has a committed delivery milestone of completion by December 2016 and the project is on target to meet that date.

DC Regeneration. Programme ID 16.08

Current project stage: Option selection

This project is to enable rolling stock to operate with regenerative braking on all DC routes in Wessex, Sussex and Kent.

The scope of works encompasses the testing of DC systems, and rolling stock, and the modification of contact breakers, transformer settings and other equipment to allow regenerative braking. On three Wessex routes where power is supplied to LUL rolling stock, segregation of power supplies may be needed to allow older LUL stock to continue to operate reliably.

Implementation authority is expected to be sought in Autumn 2011.

Progress in 2009/10

- testing of some rolling stock types has been completed;
- testing of DC equipment has commenced; and
- surveys of transformer tap changers have commenced.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by March 2014. The project milestones are currently under review and may be subject to change control.

Programme ID 17.00 Southern Capacity

Gatwick Airport remodelling and passenger capacity scheme, Programme ID 17.01

Current Project Stage: Single Option Development

The project will deliver improved performance, reduced journey times and removal of the existing capacity constraint at Gatwick caused by the express services crossing over four running lines every 15 minutes. Passenger congestion will be reduced and accessibility improved. The signalling interlocking will be renewed as part of this project.

These outputs will be achieved through the construction of a 7th platform, with associated track and signalling, to accommodate the move of the airport services from the slow line platforms. Enhancements will be made to the passenger facilities on platforms 5 / 6 to improve passenger circulation and access to and from the station concourse. Full accessibility will be provided onto the new platform via a new walkway linked into the existing concourse.

Progress in 2009/10

The project is to be multi-funded and Network Rail and Gatwick Airport Limited have been holding discussions with Crawley Borough Council, Department for Transport, Government Office for the South East, Regional Transport Board and West Sussex County Council about securing the necessary funding to take this project forward. The parties hope to be in a position to announce an outcome soon.

This project has a committed delivery milestone of completion by December 2012 and the project expects that this will now move to Summer 2013.

Milestones in the year for ID 17.01

Activity/ Output	*Date*	*Date Met / Expected*
Funding identified and scope agreed	March 2010	March 2010 (scope)

East Croydon Passenger Capacity Scheme. Programme ID 17.02

Current project stage: Single Option Development

The station capacity improvement project delivers a mid-platform dispersal bridge that redirects passengers requiring the town centre and office district away from the existing congested concourse and associated access ramps by providing a second entrance to the west of the station. The bridge will also provide level access between platforms via lifts. The project also looks to remodel the existing station concourse to improve pedestrian flows into the town centre.

Progress in 2009/10

- Network Rail has worked closely with London Borough of Croydon and local landowners to produce a Masterplan for the East Croydon area that includes significant improvements to East Croydon station;
- the station capacity project has been integrated with neighbouring property developments;
- London Borough of Croydon has confirmed funding in principle to widen the dispersal bridge and to provide a pedestrian access across the Railway; and
- significant progress on the outline bridge design has been made.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by December 2013 and the project is on target to meet that date.

Seven Sisters Improved Access. Programme ID 17.03

Current project stage: Output Definition

The project will facilitate anticipated increases in passengers at Seven Sisters station, including the interchange between the National Rail and London Underground networks.

Further development work will give more detailed scope and level of works required. It is anticipated that the scope of work will include widening staircases, extending canopies and providing additional seating, lighting and CIS equipment.

The project will build upon the development work undertaken by the NSIP programme.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by March 2014 and the project is on target to meet that date.

Programme ID 18.00 East Coast Main Line Improvements

Capacity Relief to the ECML (GN/GE Joint Line). Programme ID 18.01

Current Project Stage: Option Selection

The project will generate additional passenger train paths on the East Coast Mainline (ECML) between Peterborough and Doncaster through the provision of W9 and W10 gauge cleared paths on the GNGE Joint Line (Peterborough to Doncaster via Spalding and Lincoln), and the upgrade of structures and track to accommodate the predicted increase in annual gross tonnage. Additional infrastructure upgrades will be introduced to increase line speeds where affordable. Werrington Junction is to be upgraded to allow rail traffic to / from East Anglia to cross the East Coast Main Line without conflict. Level crossings will be upgraded as required driven by increased traffic and line speeds.

The project will allow an increase in Long Distance High Speed (LDHS) and freight services as part of a programme of ECML schemes as identified in the ECML Route Utilisation Strategy to support the increased passenger kilometre HLOS metric for route 8 for longer distance journeys to and from London.

Progress in 2009/10 (Werrington Junction)

- pre-feasibility completed in December 2009;
- initial consultation undertaken with local authority, train and freight operating companies;
- single ladder at-grade option rejected due to inability to meet outputs;
- New England fast line fly-over option rejected due to excessive cost;
- double ladder (southwards extension to Werrington Jn) at-grade option under analysis;
- grade separated options under analysis:
  - Long fly-over;
  - Short fly-over; and
  - Dive under.
- Peterborough area performance modelling underway to understand the impact of each junction option on the various Peterborough Station Development options.

Progress in 2009/10 (Route)

- pre-feasibility completed in December 2009;
- extensive consultation undertaken with local and highway authorities;
- initial consultation undertaken with freight operating companies;
- accelerated track enhancements continue in conjunction with planned track renewals;
- option selection work banks identified for all disciplines;
- significant progress made to reduce anticipated final cost with initiatives ongoing to reduce in line with budget during option selection; and
- initial pre-feasibility level performance modelling complete. Planning for additional performance modelling underway.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by March 2014 if no grade separation is required, and CP5 if it is required. The project is on target to make that decision.

Peterborough Station Area Capacity enhancements. Programme ID 18.02

Current Project Stage: Option Selection

The scheme will generate additional passenger train paths on the East Coast Mainline (ECML) at Peterborough by segregating East Anglian traffic from the East Coast Main Line through the development of a new island platform (6 and 7) to the west of the station. East Anglian freight traffic will be accommodated by means of a 775m goods loop to the west of the station area.

Options are being considered to extend the existing platforms 2 and 3 to accommodate 12-car Thameslink trains. Options are also being considered to extend the existing platforms 4 and 5 to accommodate Intercity Express Programme trains.

The scheme will allow an increase in Long Distance High Speed (LDHS) and freight services as part of a programme of ECML schemes as identified in the ECML Route Utilisation Strategy to support the increased passenger kilometre HLOS metric for route 8 for longer distance journeys to/from London.

Progress in 2009/10

- pre-feasibility completed in December 2009;
- extensive consultation undertaken with local authority, train and freight operating companies;
- options comprising double platforms being developed in option selection;
- all options that comprise a separate bay platform for Spalding/Lincoln services rejected;
- all options that extend both footbridges to Platforms 6 and 7 being developed;
- continuing to liaise with Thameslink Programme and Inter City Express Programme;

- LDHS versus non-LDHS conflict count complete; and
- performance modelling ongoing for each option with Werrington Junction options being taken into account.

Milestones in the year
The confirmation of benefits milestone has slipped as a result of further option selections and development in order to provide a more integrated solution with the GN/ GE (Great Northern/ Great Eastern) Joint Line.

This project has a committed delivery milestone of completion by June 2014 and the project is on target to meet that date.

Milestones in the year for ID 18.02		
Activity/ Output	***Date***	***Date Met / Expected***
Performance benefits modelling	December 2009	December 2009
Confirmation of Benefits	March 2010	July 2010

Alexandra Palace to Finsbury Park 3rd Up line. Programme ID 18.03

Current Project Stage: Single Option Development

This project provides for an additional third passenger line in the Up direction (towards London) from Alexandra Palace (leading off from the Up Hertford line to the north of Alexandra Place station) through to the top of Holloway Bank. It also includes associated platform faces at Alexandra Palace and Finsbury Park stations, to allow the trains to serve these locations. This allows some Gordon Hill/Hertford to Moorgate inner suburban services Moorgate to operate independently from Alexandra Palace of outer suburban and Long Distance High Speed (LDHS) services.

The project will allow an increase in LDHS and freight services as part of a programme of East Coast Mainline (ECML) schemes as identified in the ECML Route Utilisation Strategy to support the increased passenger kilometre HLOS metric for route 8 for longer distance journeys to/from London.

Progress in 2009/10

- value management and value engineering exercises carried out to confirm preferred single option within budget;
- performance modelling was completed to confirm the benefits of the scheme;
- consultation has been carried out with all affected train and freight operating companies both in terms of gaining;
- their acceptance of the preferred single option and discussing the early proposals for possessions;
- single option development authority was secured in March 2010 in advance of the committed delivery milestone;
- a number of initiatives have been identified in relation to reducing the anticipated final cost to be in line with budget which will be progressed as part of the remaining single option development design activities and later stages of the project; and
- WORK has also been carried out on behalf of the Thameslink Programme in relation to developing a single option for 12 car extensions to platforms 3 and 5 at Finsbury Park.

Milestones in the year
There were a number of factors that kept the project in single option for longer than originally planned to optimise the project efficiencies and improve cost efficiencies. These include:

- combining with the Down scheme (programme ID 18.04);
- works to confirm single option was within budget;
- removing major items of scope with revisions to the delivery plan in July 2009;
- change to the rolling stock strategy in relation to Moorgate; and
- managing the emerging interface with NSIP (National Stations Improvement Programme) and Thameslink Hornsey Depot connection project.

This project has a committed delivery milestone of completion by June 2014 and the project is on target to meet that date.

Milestones in the year for ID 18.03		
Activity/ Output	***Date***	***Date Met / Expected***
Single option report	December 2009	March 2010
Authority to progress to single option development	December 2009	March 2010

Finsbury Park – Alexandra Palace 3rd Down Line improvements. Programme ID 18.04

Current Project Stage: Single Option Development

This project supports the improved use of the Down slow 2 line between Finsbury Park and Alexandra Palace thereby allowing some Moorgate to Gordon Hill/Hertford inner suburban services to operate independently of other inner and outer suburban and Long distance high Speed (LDHS) services south of Alexandra Palace through improving linespeeds on the Down Slow 2.

The project will allow an increase in LDHS and freight services as part of a programme of East Coast Mainline (ECML) projects as identified in the ECML Route Utilisation Strategy to support the increased passenger kilometre HLOS metric for route 8 for longer distance journeys to/from London.

Progress in 2009/10

- option selection contract was let and output provided in November 2009;
- performance modelling was completed to confirm the benefits of the project;
- consultation has been carried out with all affected train and freight operating companies both in terms of gaining their acceptance of the preferred single option and discussing the early proposals for possessions; and
- a number of initiatives have been identified in relation to reducing the anticipated final cost to be in line with budget which will be progressed as part of the remaining single option development activities and later stages of the project.

Milestones in the year

Authority for single option development has been delayed as procurement of consultants to complete option selection took longer than anticipated. This slippage was then further exacerbated as some of the scheme outputs were combined with Alexandra Palace to Finsbury Park 3rd Up line (Programme ID 18.03), which has a later delivery date, for efficiency purposes.

This project has a committed delivery milestone of completion by June 2014 and the project is on target to meet that date.

Milestones in the year for ID 18.04

Activity/ Output	*Date*	*Date Met / Expected*
Authority for single option development	December 2009	March 2010

East Coast Mainline (ECML) Level Crossings. Programme ID 18.05

Current Project Stage: Option Selection

The project supports the increase in passenger and freight services on the East Coast Main Line between King's Cross and Northallerton and between Newark Northgate and Lincoln, by eliminating or reducing the safety risks associated with level crossings. Once relevant crossings are risk scored, proposed options are to be developed for each crossing to enable understanding of costs, planning issues, timescales, business case and risks. Delivery will be subject to confirmation of the preferred option in each case and obtaining any necessary external consents.

Progress in 2009/10

- risk scoring of all relevant level crossings was completed and identification of crossing requiring further investigation;
- single option selection was completed in December 2009, meeting the delivery plan milestone;
- work has commenced to gain local authority and planning consent where required; and
- the scheme is on target to meet delivery plan milestones.

This project has a committed delivery milestone of completion by March 2014 and the project is on target to meet that date.

Milestones in the year for ID 18.05

Activity/ Output	*Date*	*Date Met / Expected*
Feasibility of options considered and a single option selected for each crossing	December 2009	December 2009

Hitchin Grade Separation. Programme ID 18.06

Current Project Stage: Single Option Development

This project will eliminate conflicting movements at Hitchin on the East Coast Main Line (ECML), where the branch line to Cambridge divides from the main line. The conflicts are between trains towards London from the Peterborough direction and trains from London which leave the main line towards Cambridge. This removes a major constraint in developing timetables, thereby allowing an increase in Long Distance High Speed (LDHS) and freight services as part of the overall programme of schemes on the ECML as well as reducing junction layout risk. This scheme also provides for greater flexibility during maintenance, engineering and operational perturbation.

The project consists of a flyover to the north of Hitchin Cambridge Junction from the Down Slow to the Down Cambridge line and a 70mph Down Fast to Down Slow crossover immediately north of Hitchin Cambridge Junction. The line speed from Down Fast to Down Slow crossover was originally 75mph. The change from 75mph to 70mph has been passed and agreed via change control with the client.

Progress in 2009/10

- 3 day public exhibition in Hitchin and follow-up session in Letchworth in July 2009;
- detailed design, implementation and completion authority secured for implementation of Down Fast to Down Slow crossover as part of planned track renewals and delivered;
- submission of Transport & Works Act (TWA) application three months ahead of milestone. Submission of Statement of Case and all associated proofs of evidence made to timescale;
- Single Option development authority for balance of the activities post TWA submission secured March 2010; and
- access strategy consulted with customers in preparation for network change.

This project has a committed delivery milestone of completion by June 2014 and subject to the progress of the TWA process the project is on target to meet that date.

Milestones in the year for ID 18.06

Activity/ Output	*Date*	*Date Met / Expected*
TWA application submitted	December 2009	September 2009
Outline design complete	December 2010	December 2010

York Holgate junction 4th Line. Programme ID 18.07

Current Project Stage: Single Option

The project will provide an additional connection into platform 11 and platform 10 via a crossover from the new line, along with operational improvements on platforms 9 and 10.

The project will eliminate conflicting moves from the Leeds line passenger services that are operating to the North East and Scotland and all other passenger services. This reduces a major constraint in developing timetables on the East Coast Main Line (ECML) thereby allowing an increase in Long Distance High Speed (LDHS) and freight services as part of a programme of ECML schemes as identified in the ECML Route Utilisation Strategy to support the increased passenger kilometre HLOS metric for route 8 (ECML) for longer distance journeys to/from London.

Progress in 2009/10

- value management and value engineering exercises carried out;
- performance modelling completed;
- efficient infrastructure delivery initiatives identified;
- detailed consultation with affected train operators has established an agreed access strategy; and
- detailed capacity planning completed to provide minimal level of disruption to the train operators;

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by September 2012 and the project is on target to meet that date.

Shaftholme Junction remodelling. Programme ID 18.08

Current Project Stage: Single Option

The project will allow an increase in passenger and freight services on the East Coast main line (ECML) by removing a significant number of existing freight services between Joan Croft junction and Hambleton South Junction and re-routing them via the new chord on a more direct route, thereby creating capacity on this constrained 2 track section of the ECML, while at the same time reducing mileage and journey times for the majority of the re-routed freight trains.

The project forms part of a programme of ECML schemes as to support the increased passenger kilometre HLOS metric for route 8 for longer distance journeys to/from London.

Progress in 2009/10

- value management and value engineering exercises carried out;
- outline designs for the new chord;
- detailed Bill of Qualities for the new infrastructure;
- formal notification to Infrastructure Planning Committee (IPC) issued by Network Rail;
- in accordance with IPC guidance our Statement of Community Consultation has been issued to Doncaster Metropolitan Borough Council for comment. This details how we will consult the public on the scheme;
- environmental Baseline Studies undertaken to support Environmental Impact Assessment; and
- performance modelling was completed to confirm the benefits of the scheme.

This project has a committed delivery milestone of completion by June 2014 and the project is on target to meet that date.

Milestones in the year for ID 18.08

Activity/ Output	*Date*	*Date Met / Expected*
Commence TWA (now being progressed as Development Consent Order) order preparation	June 2009	June 2009

First Capital Connect Train Lengthening. Programme ID 18.10

Current Project Stage: Single Option Development

The project provides infrastructure enhancement to support the delivery of London HLOS capacity metrics in CP 4. The specific requirements are for platform extensions for operation of longer vehicle trains and future Thameslink trains at Letchworth Up and Down platforms and Royston Down platform. This includes, where necessary, the provision of additional Driver Only Operated train dispatch equipment on these platforms, and possible relocation of existing equipment.

Progress in 2009/10

- single option selection was completed in September 2009, meeting the delivery plan milestone;
- Rail Safety and Standards Board derogation was secured in July 2009 to extend the platform at Royston station on the curved Cambridge end, which supports the least disruptive and most cost effective option;
- consultation has been carried out with First Capital Connect to gain acceptance of the preferred single options. Intercity Express Programme requirements have been included at Royston;
- single option development authority was secured in November 2009; and
- a number of activities have been carried out to reduce the final cost and these will be progressed during single option development.

This project has a committed delivery milestone of completion by June 2012 and the project is on target to meet that date.

Milestones in the year for ID 18.10

Activity/ Output	*Date*	*Date Met / Expected*
Option selection report	September 2009	September 2009

Programme ID 19.00
ECML OLE

East Coast Main Line Overhead Line Electrification Performance Improvements.

Current Project Stage: Single Option Development

Scope of works

This project is split into the following distinct elements:

- defect survey – full survey of the ECML to record all defects, all outstanding campaign changes and any existing non-conformances;
- campaign changes – the implementation of 11 campaign changes. This is the removal of components or designs with known reliability problems with a modern fit-for-purpose equivalent;
- defect removal – in line with the campaign change delivery, all defects identified as a risk to performance will be removed with highest priorities being delivered first. A separate work stream will be used for tunnels where a non-intrusive survey is not practicable; and
- neutral sections – the upgrade of 78 neutral sections to a more reliable type.

The project will incorporate approximately 1900 wire runs within the ECML from London King's Cross to Marshall Meadows incorporating the Hertford, Cambridge and Doncaster to Leeds branch lines.

Progress in 2009/10

- the project has surveyed all 1,927 wire-runs on ECML;
- defects and Campaign Changes are substantially completed in 13 Tunnels (38 of 50 wire-runs);
- designs are completed for 78 Neutral Sections; and
- the anticipated final cost has reduced because of an efficient project delivery strategy, reduced contractor costs and the de-scoping of the vegetation works.

Milestones in the year

The project has been delayed for the following reasons:

- assessing potential synergies and efficiencies with other projects; and
- access restrictions not previously anticipated.

As a result of the above there has been a net saving of £10.6 million.

This project has committed delivery milestones which are on target to be met. However the defect removal and campaign changes which were due to be completed by December 2011 are now expected to slip to March 2013 due to difficulties in gaining access to the Network. Change control will be sought in due course.

Milestones in the year for ID 19.00

Activity/ Output	*Date*	*Date Met / Expected*
Defect removal and campaign changes (tunnels)	June 2010	September 2010

Programme ID 20.00 St Pancras – Sheffield linespeed improvements

Current Project Stage: Option selection

The purpose of the project is to reduce the journey time between St Pancras and Sheffield by 8 minutes, for type 222 unit with a stopping pattern of Leicester, Derby, Chesterfield and Sheffield.

Establishing an affordable solution to meet the clients' requirements whilst exploiting efficiently costed opportunities took longer than originally planned. This change is currently being reviewed by the control change panel.

Progress in 2009/10

- delivery of an agreed single line speed profile option.

Milestones in the year (Change Control pending) for ID 20.00		
Activity/ Output	***Date***	***Date Met / Expected***
Realignment of track between Bedford and Leicester	December 2009	Deferred in conjunction with above submitted Change Control
Realignment of track between Luton and Bedford	December 2009	Deferred in conjunction with above submitted Change Control

Programme ID 21.00
Nottingham Resignalling

Current Project Stage: Single option development

The project will enhance capacity through remodelling, re-signalling and re-design of platform layout at the west end of Nottingham. This will enhance the layout leading to improved services operating through Nottingham and improved performance. The project also migrates the control of the area into the East Midlands Control Centre in Derby.

Progress in 2009/10

- moved from option selection to single option development in May 2009; and
- commissioning blockade now agreed with Customers for Summer 2013.

No milestones were committed to be delivered last year.

Programme ID 22.00 Midlands Improvement Programme

Bromsgrove Electrification Programme ID 22.01

Current Project Stage: Option Selection

Network Rail has a CP4 output commitment to enable the extension of services on the Birmingham Cross City South in CP4. Currently London Midland operates six trains an hour to Longbridge with two trains an hour running on further to Redditch (Class 323 rolling stock). The output is that all services would be extended from Longbridge such that three trains an hour operate to Bromsgrove (and three trains an hour to Redditch under Programme ID 22.02).

The scope of the project includes:

- extension of four and quarter miles of electrification from Barnt Green to Bromsgrove;
- immunisation of the existing signalling equipment between Barnt Green and Bromsgrove which could result in complete signalling renewal and control transfer;
- permanent way and signalling enhancements at the relocated Bromsgrove station to facilitate the turning back of trains; and
- five over bridges between Barnt Green and Bromsgrove have been identified for either bridge reconstruction or track lowering are to be examined due to potential insufficient clearance for electrification.

This project has a dependency on a third party funded project to enhance the functionality of the station at Bromsgrove, funding for which is currently under review.

Progress in 2009/10

- examination of the options of immunisation or resignalling has identified that the resignalling offers the more sustainable solution.

This project has a committed delivery milestone of completion by December 2013 but because of the dependency on the functionality of the station that date is likely to slip into CP5 and will need change control in due course.

Milestones in the year for ID 22.01

Activity/ Output	*Date*	*Date Met / Expected*
Start option selection process	March 2010	January 2010

Redditch Branch Enhancement. Programme ID 22.02

Current Project Stage: Option Selection

This project enables the extension of services on the Birmingham Cross City South by March 2014. Currently London Midland operates six trains an hour run to Longbridge with two trains an hour running on further to Redditch. The output is that all services would be extended from Longbridge such that three trains an hour operate to Redditch (and three trains an hour to Bromsgrove under Programme ID 22.02).

The scope of the project is for passing loop between Alvechurch and Redditch Stations and an option of a second platform face at Redditch Station.

Progress in 2009/10

- timetabling and Railsys modelling were undertaken to challenge and test a number of potential of infrastructure interventions proposed in the pre-feasibility study in 2008/09. This new work concluded that a passing loop between Alvechurch and Redditch would be required to run the three trains an hour to Redditch;
- following on from the timetabling and Railsys work was the development of the engineering remit specification to articulate the requirements of the asset management engineers on this section of route. This was obtained and signed-off;
- towards the year end, the tender for the option selection engineering development services and surveys was prepared for issue; and
- the next milestone is the start of single option development in June 2010. This will not now be achieved and the whole delivery plan needs to be reworked and change control will be applied through agreed processes to still achieve project commissioning in CP4.

This project has a committed delivery milestone of completion by December 2012 and the project is on target to meet that date.

Milestones in the year for ID 22.02

Activity/ Output	*Date*	*Date Met / Expected*
Start option selection process	September 2009	July 2009

Line Speed Improvements Wrexham to Marylebone Programme ID 22.03

Current Project Stage: Single Option Development

This output is to be delivered by Chiltern Railways as an integral part of the Evergreen 3 project, which includes linespeed improvements, infrastructure enhancements and fleet upgrade to deliver a 100-minute fastest journey time between London (Marylebone) and Birmingham (Moor Street). A contribution is to be made to the Evergreen project in respect of line speed improvements at Aynho Junction which will deliver 1 minute towards the journey time reductions.

Progress in 2009/10

- Asset Purchase Agreement in respect of RAB financing for the Evergreen 3 project signed between Network Rail and Chiltern Railways in December 2009;
- Asset Protection Agreement also signed between Network Rail and Chiltern Railways for implementation of the journey time reduction works on the Chiltern Main Line;
- main contracts let between Chiltern Railways and BAM Nuttall;
- design Approvals in Principle (AIP) largely completed – three track AIPs and the final signalling AIP and Interdisciplinary Check (IDC) remain to be completed before formal single option development signoff planned for June 2010; and
- construction programme being developed by Chiltern Railways.

Construction planned to be completed by December 2011, but detail awaited as to phasing of individual elements of work, including line speed improvements at Aynho.

Milestones in the year for ID 22.03

Activity/ Output	*Date*	*Date Met / Expected*
Authority for option analysis and single option development	June 2009	April 2009
Single option development commences	September 2009	April 2009

Route 16 – South Ruislip Loop (Gerrards Cross bay platform) ID 22.04

Current Project Stage: Single Option Development

The project scope has been amended via external change control and now comprises track and signalling alterations at South Ruislip in connection with capacity and speed improvements in the Northolt Junction area, rather than construction of a new bay platform at Gerrards Cross. This latter work no longer forms part of the scope of the Evergreen 3 project.

This output is to be delivered by Chiltern Railways as an integral part of the Evergreen 3 project, to which a contribution is to be made by Network Rail.

Progress in 2009/10

- Asset Purchase Agreement in respect of RAB financing for the Evergreen 3 project signed between Network Rail and Chiltern Railways in December 2009;
- Asset Protection Agreement also signed between Network Rail and Chiltern Railways for implementation of the journey time reduction works on the Chiltern Main Line;
- main contracts let between Chiltern Railways and BAM Nuttall;
- design Approvals in Principle (AIP) largely completed – three track AIPs and the final signalling AIP and Interdisciplinary Check (IDC) remain to be completed before formal single option development signoff planned for June 2010; and
- construction programme being developed by Chiltern Railways.

Construction planned to be completed by December 2011, but detail awaited as to phasing of individual elements of work, including capacity and speed improvements at Northolt.

Milestones in the year for ID 22.04

Activity/ Output	*Date*	*Date Met / Expected*
Scheme design commenced for track, signalling and civils works	March 2010	March 2010

Route 17 – Train lengthening ID 22.05

Current Project Stage: Single Option Development

The project supports the industry capacity metric from the HLOS for West Midlands Route 17 and requirements for train operating companies' operational plans. This is to be achieved by extending station platforms to facilitate longer trains and using the option of selective door opening where necessary.

Progress in 2009/10

- the project has undertaken surveys, ground investigations and preliminary project design specifications at all sites for further progression during option selection;
- the project met the committed delivery milestone for single option development in March 2010. Acceleration of platforms extensions at Widney Manor, Yardley Wood, Whitlocks End and Wythall stations was undertaken to improve delivery with London Midland's schedule for introduction of new Class 172 trains;
- option reports for Spring Road, Langley Green, Cradley Heath, Kidderminster, Droitwich Spa, Small Heath, Hampton in Arden, Lye and Wilnecote are complete. The project team has attended two national workshops to encourage best practice on platform extensions across the country; and
- rationalisation of outputs and alignment with the train operators plans has instigated a change to the project. The change proposed is a 4-car train introduction during CP4 on the Cannock lines and a reduced functionality for 5-car platforms with 6-car SDO at Lye and Spring Road and removal from scope of Snow Hill platforms, as 6-car functionality exists. These scope changes, supported by London Midland, can be delivered within the published milestones.

This project has a committed delivery milestone of completion by December 2013 and the project is on target to meet that date.

Milestones in the year for ID 22.05

Activity/ Output	*Date*	*Date Met / Expected*
Start option selection process	June 2009	June 2009
Start development of single option	March 2010	March 2010

East Midlands train lengthening Programme ID 22.06

Current Project Stage: Single Option Development

The project provides infrastructure to support the delivery of Midlands HLOS capacity metrics in CP4. This will allow the following increases in capacity as shown in the table below.

This is to be achieved three separate projects:

- project 1 requires platform lengthening to accommodate 10x23m (class 222) at Loughborough station (platforms 1 & 2). The current platforms can only accommodate 4 Car class 222s so the new platform lengths will be more than double of the existing lengths (235m);
- project 2 will require platform lengthening to accommodate 4x23m (class 170) vehicle trains at Stansted Airport station (97m). This scheme is being developed and delivered by East Anglia Route as part of other non-related works at the station; and
- project 3 is a funding contribution to Cross Country Trains for the fitment of Selective Door Operation (SDO) to the Turbostar (Class 170/1) fleet to enable 4x23m (Class 170) trains to call at all stations on the Birmingham to Stansted route. This includes infrequent calls at Whittlesea and Manea.

Progress in 2009/10

- single option selection was completed early 2010 for project 1. Single option development commenced in January 2010, and will be completed in January 2011;
- Cross Country started the feasibility for project 2 and the study will take approximately 6 weeks; and
- single option development continues for project 3. The works to extend Stansted platform 2 are planned in possessions booked for November 2011.

Milestones in the year

Single option development slipped slightly as a result of project value management.

This project has a committed delivery milestone of completion by June 2012 and the project is on target to meet that date.

Increases in Capacity

Description	*Additional vehicles involved*	*Station served*	*0700 – 0959 capacity impact*	*0800 – 0859 capacity impact*
Midlands Trains and Cross Country trains	6	Leicester	612	510
Lengthening of East Midlands Trains	10	Nottingham	1,170	936

Milestones in the year for ID 22.06

Activity/ Output	*Date*	*Date Met / Expected*
Single option development	December 2009	January 2010

Programme ID 23.00 Northern Urban Centres (a) Yorkshire

All the projects in this programme are currently being re-evaluated as a result of the clients uncertainty of the outputs required.

Capacity Improvements (Leeds area). Programme ID 23.01

Programme ID 23.01 includes the following projects:

Capacity Improvements (Leeds area)

Current Project Stage: Output Definition, Pre-Feasibility, Option Selection

The project is to provide additional platform capacity at Leeds station. The original project was to provide an additional bay platform opposite platform 1 capable of taking at least 6 x 23m vehicle trains; and additional platform capacity on the south side of the station, focusing on lengthening platform 17 or an additional platform 18.

During the early development work an additional option was introduced, which was to create a through platform from two bay platforms 13 & 14. This is the option which is now going to be taken through pre-feasibility and option selection.

Significant interfaces

- there are potential interfaces with platform extensions on the West Yorkshire sections of the routes; and
- the scheme could interface with the Micklefield Turnback (East Leeds Parkway).

Progress in 2009/10

- regular communication is taking place between Northern Rail, the Network Rail Client and the project team to make sure that the infrastructure interventions meet the requirements of the rolling stock.

No milestones were committed to be delivered last year.

West and South Yorkshire Platform Lengthening, including South Yorkshire Train Lengthening

Current Project Stage: Option selection

This project concerns the provision of longer platforms at stations in West and South Yorkshire to meet the requirements of Northern Rail's CP4 Operational Plan and to meet HLOS passenger growth metrics.

The project scope is to provide 143 metre platforms at stations on the routes from Leeds to Skipton and Ilkley to facilitate the operation of six-car trains of 23 metre vehicles, and to facilitate the operation of trains of varying lengths and formations on other routes in accordance with the Operational Plan.

Option selection development has been completed for a total of 38 stations on routes in West and South Yorkshire enabling Network Planning to select those stations where platform lengthening is to be taken forward to subsequent development stages.

The project is due to be completed in 2013, in line with the timescales for Northern Rail's Operational Plan.

Progress in 2009/10

- authority was obtained in August 2009 to develop platform lengthening at ten stations on the routes from Leeds to Skipton and Ilkley to single option development;
- further work has taken place in conjunction with Network Planning and Northern Rail to refine the project scope in light of the evolving nature of Northern Rail's Operational Plan;
- revised cost estimates have been produced to reflect these changes to scope, along with revised project manager's and engineering remits in preparation for a further authority submission in July 2010; and
- a contracting strategy for the project has been devised and approved.

No milestones were committed to be delivered last year.

West Yorkshire Stabling (Northern Urban Centres)

Current Project Stage: Output Definition, Pre-Feasibility, Option Selection

Network Rail's obligation

Our obligation is to provide the necessary infrastructure to facilitate the operational plan agreed with train operators to deliver HLOS capacity metrics.

The scope of work necessary to meet the obligation for stabling was additional stabling and servicing in the Huddersfield and Skipton areas to accommodate up to 34 and 16 (additional) vehicles per night respectively for Northern Rail as part of the DfT Rolling Stock Strategy. These numbers of vehicles have now reduced, but no final numbers have been confirmed. Hillhouse stabling has now been placed on hold due to the dramatic reduction in the number for DMU's expected.

Additional stabling facilities were considered at Harrogate, Huddersfield and Skipton to accommodate additional vehicles every night for Northern Rail as part of the DfT Rolling Stock Strategy; Only Skipton will be progressed at present.

The project has suffered delays as DfT have not finalised Operational Plan for Northern Rail. The delivery plan milestone will now not be achieved.

Progress in 2009/10

- the feasibility work for the project has completed; and
- regular communication is taking place between Northern Rail, the Network Rail Client and the project team to make sure that the infrastructure interventions meet the requirements of the rolling stock.

No milestones were committed to be delivered last year.

South Yorkshire Stabling for Northern. Programme ID 23.03

Current Project Stage: Output Definition, Pre-Feasibility, Option Selection

Our obligation is to provide the necessary infrastructure to facilitate the operational plan assumed with train operators to deliver HLOS capacity metrics.

Project scope had previously concentrated on the Tinsley depot area / Ickles Yard sites and the existing station and depot facilities at Sheffield station. Due to the reduction in numbers of diesel trains in the current version of the Northern Rail operation plan (yet to be finalised by the DfT), these will no longer be progressed.

The scheme will now provide additional stabling for Northern Rail's fleet at an existing site, Hull, so that Neville Hill and Newton Heath depots can concentrate on maintenance thereby avoiding the need for additional maintenance depots. It will support the additional vehicles required to lengthen services into Sheffield and also those that operate between Sheffield and Leeds that provide peak capacity for Leeds.

Significant interfaces

- there are potential interfaces with platform extensions on the South Yorkshire sections of the routes; and
- the scheme could interface with the tram train trial project.

Progress in 2009/10

- regular communication is taking place between Northern Rail, the Network Rail Client and the project team to make sure that the infrastructure interventions meet the requirements of the rolling stock.

Milestones in the year for ID 23.03		
Activity/ Output	***Date***	***Date Met / Expected***
Complete Option Selection	September 2009	(1)

Note: (1) Programme scope has changed and therefore the milestone is not longer applicable but cannot be change controlled until the rolling stock strategy is finalised.

Programme ID 24.00 Northern Urban Centres (b) Manchester

Route 20 – Platform Lengthening. Programme ID 24.01

Current Project Stage: Output Definition

The project is to provide the infrastructure to allow for operating longer trains on the lines of route, in accordance with the Northern Rail Operational Plan. The project is to deliver suitable platform lengthening and/or alternative solutions that may be more appropriate. The viability of options for platform lengthening will be considered, balancing the anticipated cost against the alternative options of local methods of working.

The primary outcome is to provide functionality to allow passengers to board and alight and for the train formation to stop at each platform on the corridors where lengthened trains are proposed.

Progress in 2009/10

- output definition, pre-Feasibility, option selection re-Authority was secured in April 2010;
- output definition commenced to review each route and identify the platforms to be progressed to pre-feasibility and option selection;
- Northern Rail consultation ongoing;
- project aligned with North and East HLOS schemes; and
- project aligned with national platform lengthening team.

No milestones were committed to be delivered last year.

This project is currently being re-evaluated as a result of the clients uncertainty over the outputs required.

Route 20 – Stabling for Northern. Programme ID 24.02

Current Project Stage: Output definition

The project is to provide the additional stabling, depot and light maintenance facilities required to accommodate the increased rolling stock planned for roll out to Northern Rail in CP4. Light maintenance would be removed from Newton Heath Depot, freeing capacity at Newton Heath for heavy maintenance activities.

Network Rail has purchased Allerton Depot. The remit is to survey the existing depot to determine the costs to refurbish or renew the buildings and equipment to provide an operational facility. The incremental scope of work and cost of providing maintenance facilities to undertake train examinations will be identified as part of this study.

Progress in 2009/10

- Network Rail purchased Allerton Depot;
- Clients Remit for Allerton Depot drafted and is under review by Northern Rail;
- Northern Rail consultation ongoing; and
- project aligned with North and East High Level Output Statement (HLOS) schemes.

No milestones were committed to be delivered last year.

This project is currently being re-evaluated as a result of the clients uncertainty over the outputs required.

Salford Crescent Station Redevelopment. Programme ID 24.03

Current Project Stage: Pre-feasibility

This project is to redevelop Salford Crescent station in order to support the operation of 6-car units and to improve passenger circulation and compliance with DDA arrangements at the station. It may be required to undertake minor remodelling of the track layout in order to support the operation of 6-car units.

The project is also to review the potential for an additional (third) platform at the station in order to relieve overcrowding.

The primary objectives are to:

- accommodate future projected growth of passenger numbers by lengthening and/or widening station platforms;
- investigate whether an additional platform is feasible which could also relieve overcrowding at the station;
- remodel the station to improve passenger circulation space on the platforms, possibly by de-cluttering station buildings and furniture; and
- improve access arrangements in and around the station along with improving interchange facilities.

Progress in 2009/10

- output definition complete in December 2012;
- pre-feasibility and option selection authority was secured in March 2010;
- pedestrian flow survey has been undertaken on site;
- stakeholder consultation is ongoing to align this project with adjacent projects by Greater Manchester Passenger Transport Executive (GMPTE), Salford University and Central Salford Urban Regeneration Company (URC); and
- project aligned with North and East HLOS schemes.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by December 2014 and the project is on target to meet that date.

Route 20 Capacity Enhancements. Programme ID 24.04

Current Project Stage: Single option development

This scheme combines track and signalling renewals with the installation of an additional bay platform turnback at Stalybridge Station. It includes some remodelling and speed increases of the line through the station. A new control system is to be provided for Stalybridge, Ashburys and Guide Bridge which will be located at Manchester South Signalling Control Centre.

The scheme will provide increased flexibility for network operation and train movements. The proposed additional bay platform adjoining the Ashton branch will result in increased capacity for Victoria services in support of the DfT HLOS and will remove conflict from Stalybridge Junction, enhancing performance of the Stalybridge – Piccadilly services. There will also be a new platform face for through trains.

Progress in 2009/10 (Stalybridge Intervention):

- single option development Authority was secured in June 2009 and the design contract has been awarded;
- detailed surveys were undertaken;
- the signalling scheme plan and permanent way layout have been completed. Outline design and documentation has been developed;
- consultation has been carried out with the affected train operating companies; and
- funding for detailed design, implementation, and scheme completion has been confirmed.

The project intervention at Stalybridge has a committed delivery milestone of June 2013 and the project is on target to meet that date. The project also includes interventions at Hadfield; this is currently being re-evaluated as a result of the clients uncertainty over the outputs required.

Milestones in the year for ID 24.04

Activity/ Output	*Date*	*Date Met / Expected*
Output definition Hadfield intervention	March 2010	See comment above

Programme ID 25.00 Northern Urban Centres (c) Liverpool – Leeds LSI

Current Project Stage: Option Selection
The project scope is for track, signalling, structures and earthworks alterations to take place at locations between Leeds Station and Ardwick Junction for the route via Diggle tunnel and Liverpool Lime Street Station to Manchester Oxford Road station via the Chat Moss route.

On completion of the option selection study, we expect the scope to become more defined and include:

- signalling alterations to accommodate higher line speeds;
- review of some restrictive signalling alterations;
- possible track realignments;
- track tamping and drainage works;
- gauge re-profiling; and
- timetable interventions.

Passive provision will be made for W9 and W10 gauging.

The primary output is to contribute to the route 10 and route 20 HLOS passenger kilometre metrics by stimulating further passenger demand by improving journey times between Leeds and Manchester via Diggle, and Manchester and Liverpool via Chat Moss.

Reductions in journey times between these cities are a move towards the Government's target journey time of 30 minutes between Liverpool Lime Street and Manchester via Chat Moss and 43 minutes between Manchester and Leeds. It is recognised that, achieving improved journey times will require both the defined infrastructure interventions, combined with an industry agreed timetabling intervention.

The line speed improvements will manifest as revised Sectional Running Times over the section between Liverpool Lime Street and Leeds. The scope of infrastructure and timetabling works required to achieve these time savings are currently being assessed.

Specific infrastructure interventions being examined include potential increased speeds, for example, Ardwick to Ashburys potentially restoring a 40/60 mph differential, Stalybridge to Diggle from 65 mph to 75 mph, Huddersfield to Heaton Lodge 70 mph to 85 mph, Mirfield to Batley 60/75 mph to 80 mph, Edge Hill to Astley from 75 mph to 90 mph and Patricroft to Ordsall from 75 mph to 90 mph.

Significant interfaces
There are interfaces with stakeholders including DfT, TOCs, FOCs, Merseytravel, GMPTE and West Yorkshire PTE. There are interdependencies with other projects including the seven day railway and renewals and resignalling schemes.

Milestones in the year
The milestone has not been met as further work has been completed to achieve a more integrated solution.

The project has a committed delivery milestone of completion by March 2014 and the project is on target to meet that date.

Milestones in the year for ID 25.00

Activity/ Output	*Date*	*Date Met / Expected*
Option selection report complete	March 2010	July 2010

Programme ID 26.00 Western improvements programme

Barry – Cardiff Queen Street corridor. Programme ID 26.01

Current Project Stage: Single Option Development

This scheme delivers an increase in capacity and capability of the network on the lines between Cardiff Central and Cardiff Queen Street from the current 12 trains per hour (tph) to 16tph. This will be achieved by the following enhancements:

- Cardiff Queen Street Platform 1a;
- Cardiff Queen Street Bay Platform;
- Cardiff Central Platform 8;
- Cardiff East Crossover Platform 4 to Up Barry and bi-di signalling in platforms;
- Cardiff Central Platform 5 Bay Reinstatement;
- Treforest Curve doubling;
- City Line linespeed Enhancement; and
- Cogan Junction Enhancement.

Progress in 2009/10

- The scheme is progressing toward completion of single option development with outline designs for track and station civils well advanced.
- Further detailed estimates will be developed based on the above outline designs.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by December 2016 and the project is on target to meet that date.

Cotswold Line Re-doubling. Programme ID 26.02

Current Project Stage: Detailed design and enabling

This objective of this project is to increase capacity and improve performance by re-doubling two sections of single line between Charlbury and Ascott-under-Wychwood, and Moreton-in-Marsh and Evesham. The result of the extra 20 miles of track will significantly increase the capacity for both passenger and freight operators, as well as improving the robustness of the timetable, with subsequently less delays due to the currently restricted infrastructure.

In addition to the above infrastructure works improvements will be delivered by increasing line speeds between Wolvercote Jn and Norton Junction, through removal of several restricted speed restrictions on the approach to the single to double line junctions and the removal of the token exchanges at Moreton-in-Marsh, Evesham and Norton Junction/Worcester Shrub Hill. The provision of turn-back signals at Charlbury, Moreton-in-Marsh and Evesham will improve the flexibility of the route during periods of maintenance engineering and operations perturbation.

Progress in 2009/10

- the project has successfully delivered the enabling works in Summer of 2009, which included Chipping Camden Tunnel and involved removing 20,000 tons of ballast, the existing rails and sleepers and drainage and replacing with a new drain, and lowering the track bed to accommodate the second line;
- after a change in signalling operations on the route the single option development design was revised to route based control options, this added an extra 4/6 months to the scheme and subsequently revised the delivery milestones;
- the revised single option development design work was completed in February 2010; and
- the invitation to tenders have been issued for the Track works and for Signalling, Power and Communications part of the project.

It is now planned to deliver the scheme in two stages to meet with our stakeholders aspirations, these are June 2011 for Charlbury and Ascott and August 2011 for Moreton and Evesham. The project is on target to meet those dates.

Milestones in the year for ID 26.02		
Activity/ Output	***Date***	***Date Met / Expected***
Single Option development completion	June 2009	February 2010
Detailed design commencement	June 2009	March 2010
Start of Construction	September 2009	December 2010

Westerleigh Jcn – Barnt Green Line Speed Enhancement Programme ID 26.03

Current Project Stage: Single Option Development

The project will enhance the linespeed on approximately 18 miles of track between Bristol Parkway and Gloucester and between Cheltenham and Birmingham. To be a cost effective programme the enhancement must piggyback on the track renewals planned on the route during 2010/11 to 2012/13. In addition to achieving a line speed of 100 mph over the majority of the route, the project will explore the possibility of raising the linespeed capability to 110 mph over approximately 30 miles in each direction, to be realised once relevant level crossing renewals are completed at the end of CP4 / early CP5 along with other relevant additional works that may be required.

Significant interfaces

- track renewals programme 2010/11 through to 2012/13;
- Bromsgrove station relocation project;
- Bromsgrove electrification and Redditch branch improvement; and
- Birmingham Gateway project.

Key assumptions

Delivery of this project is dependent on the availability of High Output renewals programme.

Progress in 2009/10

Development of the single option has taken place with a focus on the track enhancement elements of the project. Outline designs for track are well advanced. Surveys of footpath crossings and signalling works have also been completed. A detailed estimate of the cost of the project is underway. Possession plans for 2010/11 have been finalised with planning underway for 2011/12 and 2012/13.

A review of the 110mph speed raising possibilities has concluded that this is too expensive and outstrips the funding available.

Milestones in the year

The delay for the option selection and authority was caused by reviews to programme, cost and scope to maximise project efficiencies.

This project has a committed delivery milestone of completion by December 2012 and the project is on target to meet that date.

Milestones in the year for ID 26.03

Activity/ Output	*Date*	*Date Met / Expected*
Detailed design commencement	June 2009	March 2010
Detailed design commencement	June 2009	March 2010

Maidenhead and Twyford (relief lines) Programme ID 26.04

This project was originally required due to the proposed HLOS vehicle procurement for this line of route and the existing locations, above, being capable of handling 7 car trains. This HLOS vehicle procurement is now not going forward and so the need for this scheme is being reviewed.

Milestones in the year for ID 26.04

Activity/ Output	*Date*	*Date Met / Expected*
Start output definition	June 2009	See comment above
Decision on project progression	June 2010	See comment above

England and Wales: Other programmes

Programme ID 27.00 North London Line capacity enhancement

Current Project Stage: Implementation

The project supports an increase in both capacity and capability of the network between Willesden High Level and Stratford via Gospel Oak. This will be achieved by resignalling to reduce headways and a major re-configuration of the lines between Camden Road East Junction and Dalston Kingsland, enabling two of the four lines between Highbury & Islington and Dalston to be dedicated to East London Line services. Platforms will be lengthened to accommodate longer trains (from 3- to 4-cars).

Train performance will be maintained by the elimination of DC traction (the reconfigured lines will be 25kV AC throughout) and removal of junction conflicts at Camden Road East and Dalston Junctions. Improved provision for regulating freight trains will be provided between Camden Road and Highbury & Islington and at Stratford.

Completion of the works will enable the current North London Line 3-car service of 4 trains per hour (6 in the peaks) to be increased to a 4-car service of 6 trains per hour (8 in the peaks and during the Olympic period.) The extended East London Line service will also be 8 trains per hour.

Progress in 2009/10

- a first major milestone (Commencement of the blockade of the No. 1 lines between Camden Road East Junction and Dalston Junction) was met in April 2009;
- a second (transfer of Rail services from No. 2 lines to the completed No. 1 lines – end of all lines blockade of North London Line) was met in June 2010;
- the project has been driving forward an ambitious programme of work within a 14-week blockade of the North London Line which completed in June 2010. This saw the completion of the majority of the civil engineering work ready for 4-car train operation, the overhead line electrification was also commissioned;
- the new signalling between Camden Road and Stratford will be commissioned for the start of 2011, followed by the remaining signalling between Camden Road and Willesden High Level in early spring; and
- the extension of the East London Line to Highbury & Islington is progressing to programme and the major civil engineering work is well advanced.

This project is on target for the introduction of the new services in Spring 2011.

Milestones in the year for ID 27.00

Activity/ Output	*Date*	*Date Met / Expected*
Completion of detailed design	December 2010	December 2010

Programme ID 28.00
GSM-R coverage of freight only lines

Current Project Stage: Pre-feasibility

This project supports the provision of GSM-R radio on all freight-only branch lines in Great Britain.

The National Radio Network (NRN) operational license for southern England (i.e. south of the 'Severn / Wash line') expires in 2012. Northern England, Wales and Scotland will lose the NRN license in December 2015.

The 40 freight-only branch lines south of the 'Severn-Wash' line will be installed with GSM-R base station sub-system equipment and brought into operation by December 2012.

As a minimum, the system will provide a level and quality of driver-signaller communication equivalent to the existing NRN service. The current (baseline) scope includes the installation of trackside GSM-R base transceiver equipment together with connections to the Fixed Telecoms Network (FTN). Assumed scope volumes for freight-only branch lines are (for now) derived from the same design rules applied elsewhere on the GB railway for the provision of radio coverage using GSM-R technology. Any viable relaxation of the design rules will be identified on a site-by-site basis during the project development phase and managed as a programme efficiency.

Where branch lines are part-privately owned, radio coverage to minimum operational standards will be extended only as far as the NRCI boundary.

Progress in 2009/10

- the required sites for base stations have been identified;
- the planning approval process has commenced; and
- discussions to explore the possibility of an alternative engineering approach have been held.

No milestones were committed to be delivered last year.

This project has a committed delivery milestone of completion by July 2013 and the project is on target to meet that date.

Scotland: Programme funds

Programme ID 30.00
Tier 3 Project Development Fund

Current Project Stage: Pre-feasibility

Fund Purpose

The fund is primarily aimed at initial development for future projects that will enhance the network in Scotland and will contribute to the Scottish Government's target of promoting sustainable economic growth. Projects will be developed to a point where a decision about next steps can be made.

Funding

Individual projects within the fund need to be approved by both ourselves and Transport Scotland prior to any commitments being made.

Projects currently being progressed under this fund include electrification opportunities, Aberdeen to Inverness enhancements, Grangemouth freight connection, Glasgow and South Western line speed improvement, Highland main line journey improvements.

Progress in 2009/10

- individual projects within the Development Fund are progressing well with feasibility work taking place; and
- there are a number of additional projects proposed for inclusion in the fund over the coming months so it is anticipated that the activity will increase considerably. This is important from the point of view of being in a position to deliver potential obligations in CP5.

Milestones in the year for ID 30.00

Activity/ Output	*Date*	*Date Expected*
Rail improvements between Aberdeen and Inverness- commencement	2009/10	2010/11
Rail improvements between Aberdeen and the Central Belt- commencement	2009/10	Tbc – not yet started
West of Scotland Strategic Rail Enhancements- commencement	2009/10	2010/11

Programme ID 31.00 Scotland Small Projects Fund

This programme comprises 20 projects which are at various stages of development from output definition to project close out. All projects are programmed to be completed during CP4.

Progress in 2009/10 of key projects:

Glasgow South Suburban Renewals (GSSR, LLF690)

Current Project Stage: Single Option Development

Various enhancements in synergy with major signalling renewals, comprising: doubling of existing single lead junction at Busby Junction; signalling capacity enhancement on Glasgow Barrhead & Kilmarnock line; turnback facilities at Whitecraigs station on Neilston line.

Grangemouth Branch improvements

Current Project Stage: Implementation

New infrastructure to enhance freight capacity on the Grangemouth Branch. Design and Build Contract awarded.

Laurencekirk Loop:

Current Project Stage: Option selection

This consists of a new freight loop for freight traffic between Aberdeen and Dundee.

E & G Main Line Additional Station Shelters

Current Project Stage: Construction

Additional facilities on three stations on the Edinburgh to Glasgow line.

Aberdeen Station – New north Bay Platform

Current Project Stage: Pre-output definition

New Northbound Platform at Aberdeen station. Early stage discussions underway.

Ladybank to Hilton Junction Line speed Improvements

Current Project Stage: Single Option Development

Linespeed increase over 13 track miles North of Edinburgh. Scope consists of minor track renewal, tamping, risk assessment and speed board changes.

Hurlford Line Speed Increase

Current Project Stage: Pre-output definition

Removing an existing Permanent speed restriction by moving a signal to achieve correct breaking distance for the proposed higher linespeed with associated speed board changes.

Larbert Aster Track Circuit Replacement

Current Project Stage: Single Option Development

Provision of an additional signal between Carmuirs West and Greenhill Lower to increase capacity.

Langloan S & C Renewal

Current Project Stage: Construction

Removal of a PSR at Rosehall Junction through realignment of the signalling and crossing during a track renewal scheme.

Midcalder S & C Renewal

Current Project Stage: Output Definition

Removal of a permanent speed restriction at Midcalder through realignment of the signalling and crossing during a track renewal scheme.

Dumfries Station Improved Turnback Facility

Current Project Stage: Single option Development

Provision of a new facility to allow trains to turn back at Dumfries. The work will include land purchase and provision of a new siding using existing an signalling installation.

Bridge of Allen Signalling Renewal

Current Project Stage: Pre-Output definition

Provision of a new signal section in the down direction between Stirling and Dunblane which will improve headways / capacity on the route.

Barnhill remodelling

Current Project Stage: Outline design

Relocation of a junction and associated signalling changes to facilitate a line speed increase and resulting improvement in performance on the route.

Newbridge West Junction Signalling & Crossing Renewal

Current Project Stage: Pre-Output Definition

Removal of redundant signals and crossings with a corresponding change in track alignment to permit an increase in linespeed with resulting performance improvement.

Keith Signalling & Crossing renewal

Current Project Stage: Pre-Output Definition

Moving signals and crossing from a curve on to a straight alignment with associated signalling works to facilitate a line speed increase.

Radio Electronic Token Block (RETB)

Current Project Stage: Pre-Output Definition

The project will incorporate a modification to the way RETB Tokens are issued and returned at Banavie Signalling Centre as part of the ongoing Signalling Renewal of the RETB Interlocking. This is expected to achieve a three minute journey time saving.

Stirling Middle:

Current Project Stage: Outline Design

Major junction realignment with increased capacity in the Stirling Station area.

Scotland: specified projects

Programme ID 32.00 Scotland Projects

Airdrie to Bathgate & Linked Improvements Project 32.01

Current Project Stage: Construction, Testing and Commissioning

The project supports the provision of an electrified railway between Airdrie and Bathgate capable of operating a minimum of four passenger trains per hour at a line speed of 80 mph although 90mph should be the target speed where reasonably practical, in each direction using modern electric multiple unit (EMU) rolling stock. The project will:

- re-commission the 15 mile closed railway between Drumgelloch and Bathgate;
- enhance the existing network between Airdrie and Drumgelloch and between Bathgate and Edinburgh with electrified double track throughout; and
- provide:
  - three new stations (Caldercruix / Armadale / Blackridge);
  - two relocated stations (Drumgelloch / Bathgate);
  - three upgraded stations (Airdrie / Livingston North / Uphall); and
  - one new LMD (Light Maintenance Depot).

The project has delivered measurable performance improvements with the advance works in double tracking the Bathgate branch and doubling the single lead junction at Newbridge junction, together with the provision of second platforms and Disability Discrimination Act compliance at Livingston North and Uphall stations

Progress in 2009/10

- significant progress made with civils works for the new section of railway, including its formation, embankments, cuttings, provision of structures (over & under bridges), and cyclepath;
- completion and handover of Light Maintenance Depot train crew building to First ScotRail in December 2009 – several months earlier than planned;
- completion of advance works to double Bathgate branch line;
- electrification masts and wiring of existing operational route from Edinburgh to Bathgate is 95 per cent complete, having started earlier than planned;
- first section of new railway handed over from civils contractor to track, electrification and signalling contractors; and
- project is still expected to be available for use as planned, despite the constraints caused by the severe prolonged winter weather.

Milestones in the year

Advanced station works were delayed as there were significant interface issues with a major gas pipe diversion to facilitate the new second platform. Also other utility diversions were delayed. Furthermore, there were various unforeseen design issues which delayed start up / completion of the works.

This project has a committed delivery milestone of completion by December 2010 and the project is on target to meet that date.

Milestones in the year for ID 32.01

Activity/ Output	*Date*	*Date Met / Expected*
Complete advanced station works	April 2009	September 2009
Commence operational civils works	April 2009	April 2009
Commence Overhead line equipment works	January 2010	October 2009
Commence track laying works	February 2010	February 2010

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Paisley Corridor Improvements. Programme ID 32.02

Current Project Stage: Detailed design and implementation

This project consists of what were the Main Line works under the former Glasgow Airport Rail Link.

The project aims to enhance capacity on the Glasgow Central to Ayrshire and Inverclyde routes by means of additional platforms at Glasgow Central, three tracking with some four tracking of the Paisley corridor (between Shields Jn and Paisley Gilmour St) and loop extension works at Elderslie. Also included in the project is a full signalling renewal of the Paisley Corridor and re-control of this area, plus the routes to Ayr, Ardrossan, Largs, Wemyss Bay and Gourock, to the West of Scotland Signalling Centre.

Under a number of enabling and advance works packages, the project has already completed the loop extension works at Elderslie, overhead line equipment enabling works on the main Paisley Corridor and provision of an extra bridge deck at Hillington Road, in anticipation of the third line.

Progress in 2009/10

- commencement in September 2009 of works to install two new platforms at Glasgow Central;
- completion of the loop extension works at Elderslie in November 2009;
- completion of works to install an additional deck at Hillington Road bridge in November 2009; and
- completion of the single option outline design stage for the main Paisley corridor works with contracts awarded for signal and telecoms activities, the contract for non signal and telecoms activities was awarded in April 2010.

Although the Scottish Government decision to cancel the Glasgow Airport Rail Link branch line was announced in September 2009, progress with the main line works was not materially affected.

Milestones in the year

The design and build contract was awarded one month late due to contractual complications. There is no impact on the final delivery date.

The work to commission the enhanced infrastructure remains on programme for completion in January 2012 with full re-control of other interlockings to be complete by December 2012.

Milestones in the year for ID 32.02

Activity/ Output	*Date*	*Date Met / Expected*
Complete enabling works	December 2009	November 2009
Award Main Line Design and Build Contract – Signalling	February 2010	March 2010

Borders New Railway. Programme ID 32.03

Current Project Stage: Development and asset protection services.

The Borders Railway is a Transport Scotland managed project to build a new rail connection between the existing station at Newcraighall (south of Edinburgh) to Tweedbank in the Scottish Borders. This involves 35 miles of new railway and the construction of 7 new stations. Transport Scotland are procuring the project on a Design, Build, Finance and Maintain (DBFM) Strategy and are in the early stages of this process. Transport Scotland is forecasting the completion of the project in March 2014.

Network Rail is building approx 300 metres of new track to facilitate the connection to the national rail network. This has a committed delivery milestone of September 2011. We will also provide asset protection services and develop the appropriate contractual arrangements for the ongoing interface with the DBFM contractor. The exact nature of the interface with the new Borders Railway for signalling and telecoms will not be known until the DBFM contract has been appointed and they develop a design.

Progress in 2009/10

- single option development for commission for track connection awarded in February 2010 and all survey works completed in March 2010. Completion forecast for May 2010; and
- commercial discussions on the agreements for the operation interface and land access started in February 2010.

Glasgow to Kilmarnock. Programme ID 32.04

Current Project Stage: Completed

Development of a twin tracked section of railway between Lugton and Stewarton capable of supporting the operation of half hourly passenger services between Kilmarnock and Glasgow.

The scope of the project includes approx 5.5 miles of new track, new switch and crossings, enhanced signalling, new and refurbished station platforms and various structural works including the redecking of two underbridges.

Progress in 2009/10

- the project outputs have been successfully delivered and the benefits are now being realised with the introduction of the half hourly train service; and
- the project was delivered despite significant programme challenges which included construction difficulties at Stewarton.

Milestones lasting the year for ID 32.04

Activity/ Output	*Date*	*Date Met / Expected*
Route available for driver briefing	November 2009	November 2009
Start of Enhanced Service	December 2009	December 2009

Scotland: Other programmes

Programme ID 33.00 Other Transport Scotland Tier 3 schemes

Edinburgh to Glasgow Improvements Programme (EGIP)

Current Project Stage: Various (see below)

There are currently 6 or 7 services per hour between Edinburgh and Glasgow via the three existing routes (via Falkirk, via Shotts and via Carstairs) with a fastest journey time of around 50 minutes.

The key objectives of EGIP are:

- increase service levels via all Edinburgh to Glasgow routes to 13 services per hour with a fastest journey time of around 35 minutes;
- electrify the Edinburgh to Glasgow via Falkirk High route (plus linked diversionary routes) and the routes north from the Carmuirs area to Dunblane and Alloa. This will deliver journey time reductions and contribute towards the achievement of the Scottish Government's sustainability targets; and
- provide a new railway station on the Edinburgh to Fife line at Gogar that will integrate with the new Edinburgh Tram network to provide an onward connection to Edinburgh Airport. This will improve public transport access to the Airport and the surrounding business development area.

The programme is being developed by four projects. These are detailed below.

Edinburgh to Glasgow Electrification

Current Project Stage: Single Option development

Progress in 2009/10

- option selection development completed to cost and programme;
- costs updated to take account of national initiatives;
- Pilot Piling Programme completed to inform design solutions; and
- single option development consultancy contracts awarded.

This project has a completion date of December 2016 and the project is on target to meet that date.

Haymarket North Lines Electrification

Current Project Stage: Single option development

Progress in 2009/10

- optimum technical solution identified;
- access plans for the works agreed with affected operators; and
- implementation works tenders issued.

This project has a completion date of March 2011 and the project is on target to meet that date.

EGIP Infrastructure Projects

Current Project Stage: Single Option development

Progress in 2009/10

- option selection development completed to cost and programme;
- optimised delivery proposals developed to integrate with electrification; and
- initial identification of anticipated land requirements.

This project has a completion date of December 2016 and the project is on target to meet that date.

Gogar Intermodal Interchange

Current Project Stage: detailed design

Progress in 2009/10

- single option development completed to cost and programme;
- planning consent granted for the NR managed works; and
- detailed design contract awarded.

Milestones in the year

The rolling stock platform extensions single option development was delayed due to emerging scope issues.

This project has a completion date of July 2012 and the project is on target to meet that date.

Milestones in the year for ID 33.00

Activity/ Output	*Date*	*Date Met / Expected*
New Rolling stock depot enhancements option selection	April 2009	April 2009
New Rolling stock platform extensions single option development	May 2009	December 2009
Highland Mainline option selection	April 2009	April 2009
EGIP electrification option selection	July 2009	July 2009
EGIP enhancements programme option selection	November 2009	November 2009

Class 380 Introduction – stabling and route infrastructure works

Current Project Stage: Construction

Ayrshire and Inverclyde Infrastructure Enhancements for Class 380 Train Introduction

Customer: Transport Scotland

Outputs

The purpose of this project is to provide enhanced infrastructure to support the introduction of the proposed new Class 380 train from September 2010.

The key outputs of this scheme are as follows:

Route infrastructure

- platform extensions and alterations on the Ayrshire, Inverclyde and Glasgow to North Berwick routes to accommodate planned formations of the Class 380 train; and
- overhead line alterations to allow introduction of the Class 380 train.

Stabling and depot works

- enhancement of stabling and light maintenance capacity at Ayr Townhead and Yoker depots to support an increase in train numbers at these depots resulting from introduction of the new Class 380 trains.

Progress in 2009/10

- platform works had been progressing well with three contractors delivering the works (Jarvis, Babcock and C Spencer). However, Jarvis who had been delivering 40 per cent of the platform works went into receivership. Ex-Jarvis contracts are in the process of being awarded to other contractors and eight weeks lost on these sites;
- stepping alteration works behind other elements of the project due to late agreement of works scope. Prioritisation process has confirmed sites that require to be addressed as a priority. This process has been discussed and agreed with ORR and by the TOC, First ScotRail;
- depot and overhead line equipment works progressing well; and
- first train due to operate on the Network from 10 September 2010.

No milestones were committed to be delivered last year.

Third party promoted projects

This section gives a selection of schemes that have been developed with third parties during the year and their current status.

New Stations

Buckshaw Parkway new Station

Current Project Stage: Single option development

Client: Chorley Borough Council and Lancashire County Council

This project relates to the long standing aspiration of Chorley Borough Council, supported by Lancashire County Council, to construct a new station to serve the Buckshaw area to the north of Chorley, which is undergoing substantial development.

Progress in 2009/10

- Value Engineering/Value Management studies carried out to identify efficiency opportunities;
- a preferred option has been identified; and
- planning approval for the station has been granted.

This project has a completion date of November 2011 and the project is on target to meet that date.

Low Moor New Station

Current Project Stage: Option Selection

Client: West Yorkshire PTE

This project concerns the provision of a new two platform station with 100 space car park between Bradford Interchange and Halifax. The provision of a station at this location represents a long-standing aspiration on the part of the client, West Yorkshire Passenger Transport Executive (PTE) This is in order to improve local accessibility to the rail network and is part of the PTE's RailPlan 6 strategy document. The station will be served by Northern Rail's Leeds-Manchester Victoria and Leeds-Halifax-Huddersfield services, providing a service of two trains per hour in each direction.

Progress in 2009/10

- a timetable study has been completed by Network Rail's Performance and Capacity Analysis team. This confirms that it is feasible to provide the station with a service of two trains per hour in each direction with no significantly adverse impact on train performance on the route;
- option selection development undertaken; and
- in response to a request by the client, further option development work is being undertaken to consider the possibility of using an existing road bridge to access the platforms as an alternative to an independent footbridge.

This project has a completion date of May 2013 which is currently under review.

East Midland Parkway

Current Project Stage: Close out

Client: Department for Transport

This project has been operational since 26 January 2009.

The station is close to East Midlands Airport and conveniently located near the intersection of the M1, A50, A453, A42 and A6 roads and south of the junction between the Derby and Nottingham railway lines. A 30 minute frequency shuttle bus operates between the station and East Midlands Airport.

The station's purpose is threefold:

- a parkway station for London services;
- a Park and Ride station for the "Three Cities" – Leicester, Derby and Nottingham; and
- a station for accessing East Midlands Airport.

Despite opening during the recession, the station has been used by in excess of 300,000 people in its first year, which is above the Train Operating Company's plan.

Other Station improvements

Newport Station Regeneration

Current project stage: Implementation, and scheme completion

Client: Welsh Assembly Government

This scheme is a joint Network Rail and Welsh Assembly Government funded scheme that is scheduled to be opened in September 2010 prior to the Ryder Cup golf event in Newport.

This scheme is to deliver a regenerated station at Newport as part of the regeneration of the city and also to provide Newport with a new and notable landmark prior to the hosting of the Ryder Cup golf tournament in the Autumn of 2010.

The scheme will deliver:

- a new footbridge, which will allow people to cross easily from one side of the station to another (including passenger lifts); and
- a new station concourse.

In addition there will be an improved car park facilities (over 200 spaces) for passengers and improved facilities for passengers (including ticket office) and staff (including offices and additional mess facilities).

Progress in 2009/10

- new passenger footbridge constructed and being completed on site. The ground work and foundations for the terminals have been completed; and
- the framework for the terminal buildings and offices has been completed and the structure is shortly to be clad in line with the September 2010 completion date.

This project is due to complete the opening of the new facilities in September 2010 and the project is on target to meet that date.

11 car Pendolino Introduction (Stations)

Current project stage: Single Option Development.

Client: Department for Transport

Currently the Pendolino trains are 9 cars in length. The Department for Transport (DfT) contracted with Alstom for the manufacture of 106 additional vehicles in August 2008. Alstom are producing four new 11-car Pendolino trains and will lengthen thirty one of the existing Pendolino trains by two carriages.

Subsequently, the DfT reviewed the platform specification and made significant changes to the original assumptions. This review added additional stations into the project scope and revised the method of operation at certain locations.

The project proposes to enhance a number of platforms on the West Coast Main Line to enable operation of the lengthened Class 390 Pendolino fleet, by either platform extension or selective door operation (SDO) where extension is not feasible or economically viable.

The programme involves works at 15 stations on the West Coast Main Line. The works involve platform extension at 8 stations (14 platforms), SDO at 5 stations (6 platforms) with minor works at 4 stations (5 platforms). At Wolverhampton, Wilmslow and Watford Junction there is a requirement for signal relocation and/or relocation of an overhead line equipment gantry. At Wilmslow there are significant bridge works and cable protection or diversion required. The rest of the works only involve alterations to the platforms.

To enable SDO, trains will utilise balises on the approach to the relevant platforms to advise the Pendolino's Train Management System (TMS) that it is approaching a short platform and will automatically lock out the requisite number of carriages that will be short of the platform.

Progress in 2009/10

- additional option selection work was required to update the previous study in line with the DfT'S revised platform specification and was completed in October 2009; and
- the invitations to tender were issued in March 2010, with tenders due to be returned in May 2010.

The project has a completion date of January 2012, with the simpler platform extensions targeted for completion by June 2011. The project is on target to meet these dates.

Waverley Steps Redevelopment

Current project stage: Detailed design, implementation, and scheme completion

Client: Transport Scotland

The purpose of the project is to improve the quality of access to Edinburgh Waverley Station via the Waverley Steps which is the busiest entrance to the station and to provide a Disability Discrimination Act compliant route between the station and Princes Street.

The scheme will see the installation of three banks of up and down escalators, re-profiling of the existing stairs and a glass canopy roof. The second phase of the project will see the installation of two passenger lifts and a level walkway to Princes Street.

The scheme was originally part of a larger project for capacity improvements at Edinburgh Waverley Station which was delivered in February 2008. This element of the project was delayed due to the need to obtain a Transport and Works (Scotland) Act (TAWS) Order as the lifts breached a statutory restriction on the height of the station roof.

Progress in 2009/10

- the TAWS Order application was referred to a Public Local Inquiry which was held in July 2009 and resulted in all objections to the scheme being withdrawn prior to the conclusion of the Public Local Inquiry.

This project has a completion date of July 2012 and the project is on target to meet that date.

Stansted Airport Platform Extensions

Current project stage: Single option development

Client: Stansted Airport Limited

This purpose of this project is to enable longer trains to operate to Stansted Airport station, from both the London and Birmingham directions. The platforms will be extended to enable 12-coach trains use (platform 1) for London Liverpool Street and 4-coach trains to use platform 2 for Birmingham.

Progress in 2009/10:

- option selection Fast-track report concluded;
- single option developed and agreed; and
- outline planning consent granted.

This project has a completion date of December 2011 and the project is on target to meet that date.

Stratford Regional Station Upgrade.

Current Project Stage: Implementation, and scheme completion

Client: Olympic Delivery Authority

The project is to enhance the capacity of Stratford Regional Station to cope with increased passenger demands as forecast in the Mayor of London's London Plan for 2016 which identifies east London as a priority area for development.

It will also address the passenger demand forecast of the 2012 Olympic and Paralympic Games. Projections of passenger flows during the Olympics show forecasts of 112,000 during the morning peak three hours, consisting of 64,000 Olympic people and 47,600 non Olympic people.

Enhancements planned include widening existing platforms, de-cluttering the platforms by relocating and removing structures on the platforms, installation of additional lifts and staircases, canopy alterations, improved train operating company staff facilities, re-opening of a currently disused subway, improved security and improvements to Customer Information systems (CIS), including integration with the London Underground.

Progress in 2009/10

- new staircases and lifts have been progressively brought into service;
- new staff accommodation facility has been has been brought into use on Platform 6/8;
- platforms 3/5 and 6/8 have been resurfaced;
- phase 1 integration of the customer information system with the London Underground Limited system has been completed;
- the Train Operating Company control room has been fitted out with additional systems and facilities; and
- work is ongoing on the following items: canopies, subways, retail communications, and further stairs and lifts.

This project has a completion date of September 2010 and the project is on target to meet that date.

West Coast Car Parks

Current project stage: Various
Forecast Project Close-out: Various
Client: West Coast Trains Ltd (Virgin)
This portfolio is predominately a customer sponsored enhancement, delivered by Network Rail. There are 14 locations in the core portfolio (Runcorn, Preston, Rugby, Birmingham International, Wigan North Western, Stafford, Oxenholme, Lancaster, Carlisle, Coventry, Wolverhampton, Warrington Bank Quay, and Macclesfield), and a further three locations (Stoke-On-Trent, Crewe, and Stockport) that are subject to separate arrangements between Network Rail and Virgin.

The 14 locations in the core portfolio are being financed by Network Rail and will be funded by Virgin (and the successor franchisee). Of the 14 schemes in the core portfolio, 6 schemes are multi-storey car parks (Runcorn, Preston, Rugby, Birmingham International, Wigan North Western, and Stafford), 7 schemes are surface car parks (Oxenholme, Lancaster, Carlisle, Coventry, Wolverhampton, Warrington Bank Quay, Macclesfield) and 1 scheme, Penrith, is a single deck car park. The scheme at Oxenholme opened in CP3 and delivered 51 additional spaces

Progress in 2009/10

- between April 2009 and March 2010, a total of 2,350 additional car park spaces have been opened to the public across the following locations; Runcorn, Preston, Lancaster, Carlisle, Coventry, Wolverhampton, Rugby, Birmingham International, and Wigan North Western; and
- work is on site at Stafford and the scheme is on track to deliver 272 additional spaces in Autumn 2010.
- work is on site at Warrington Bank Quay and the scheme is on track to deliver 200 additional spaces in Autumn 2010;
- single option development has been completed for the schemes at Macclesfield and Penrith. If taken forward, these schemes would deliver a further 111 additional spaces. The decision to proceed with these schemes is subject to Department for Transport and the Office of Rail Regulation approval about the business case and funding. If approved they could be delivered in Spring/Summer 2011; and
- at Stoke-On-Trent, Network Rail Property and Virgin have reached agreement on a scheme that has seen over 300 additional spaces brought into use during the last year. At Crewe, Virgin has leased a site from a 3rd party land owner that has provided over 350 additional spaces. At Stockport, a further review of options for additional car parking is to take place during 2010/11 as the previous scheme, linked to a 3rd party property development, is unlikely to proceed as originally envisaged.

Line capacity, capability and journey time improvements

Bromsgrove Station Relocation

Current Project Stage: Option Selection

Client: Worcestershire County Council

This project is linked to the Bromsgrove Electrification Programme. The CP4 Delivery Plan states that station relocation is necessary for electrification and a pre-requisite of the extension of the Cross City services to Bromsgrove to provide the opportunity to install turnback facilities.

The existing station site has inadequate capacity and limited capability for expansion. In addition to being necessary for electrification, the project moves the station site some 250 metres further south creating the opportunity to improve the transport interchange capability, provide better station and passenger facilities and bring back into productive use the adjacent former oil depot and sidings. Scope includes longer platforms, Disability Discrimination Act compliant footbridge, additional car parking, bus and taxi stops.

Progress to date

- Value Engineering was required to develop a base option solution to relocate the station as the original single option, as designed, was not fundable. Option selection value engineering is now close to being completed; and
- discussions are underway to identify the funding options for the completion of the project.

Angel lane Freight Loop

Current Project Stage: Detailed design, implementation, and scheme completion

Client: Olympic Delivery Authority

This project will extend the length of the loop through Stratford Regional station platform 10A, the down avoiding line. It will provide additional standage for east bound freight trains which wait in the loop to join the Great Eastern Main Line and help remove them from blocking Stratford Central Junction.

That junction will see increased levels of passenger empty stock movements (ECS) as the stabling point for these trains at Thornton's Field has now migrated to Orient Way, beyond Stratford. The creation of a freight loop also provides essential regulation as this route has few facilities to provide segregation between freight and passenger services.

The extension of platform 10A at Stratford Regional station will also accommodate 12 car passenger trains providing capacity for additional stopping trains in the high passenger peaks. The benefit of this improvement is identified within the Route Utilisation Strategy (RUS).

Progress in 2009/10

- Network Change established;
- Station Change accepted by the Train Operating Company and is being established with Department for Transport;
- single option development completed;
- early works completed in order to maintain programme and minimise overall cost;
- clear scope and remit established with the project team; and
- Implementation Agreement established with the Olympic Delivery Authority.

This project has a completion date of May/April 2011 and the project is on target to meet that date.

Lea Valley On-Network Works

Current Project Stage: Option Selection, Detailed design, implementation, and scheme completion

Client: Olympic Delivery Authority

The objectives and progress on the Lea Valley On-Network project is as follows:

- modification of overhead line equipment to accommodate two road bridges built by Lend Lease as part of the Olympic development;
- connection of new sidings at Orient Way Depot;
- creation of a temporary connection into a new batching plant to transport aggregates during the Olympic park construction period;
- removal of the connection after Bovis Lend Lease complete the Olympic Village;
- extension to platforms 11 & 12 at Stratford to accommodate 8 car trains clear of Stratford Central Junction, increasing capacity on the Stratford to Stansted;
- provision of scissors crossover just north of Stratford; and
- bi-directional signalling to be installed on the Up Temple Mills Line to the country end of the scissors crossover thereby improving operational flexibility.

Progress in 2009/10

- assessment of the work remaining to be completed in order to establish funding and delivery mechanisms; and

- development of alternative, cheaper options to deliver the same functionality have been developed.

Discussions are taking place with the Olympic Delivery Authority and subject to agreement with them the completion date of September 2011 is on target.

Stratford City Redevelopment

Current Project Stage: Implementation, and scheme completion.

Client: Westfield Shopping Towns Ltd

This is an Asset Protection scheme relating to works carried out by Westfield Shopping Towns Ltd on land predominantly to the north of the station.

The works include construction of an enclosure over the former Woolwich Lines, four major bridges over the railway, including one over Stratford Regional station, two temporary footbridges and five undertrack crossings for utilities services.

Other works include lowering of the road under Warton Road bridge and construction of a retaining wall alongside the new Station Avenue.

The project will also construct a new northern ticket hall to the north of Stratford station, which although primarily for use by London Underground Limited, will include a ticketing facility for use by the National Express East Anglia and London Overground services.

Progress in 2009/10

- phase 1 of the Woolwich Line Enclosure completed;
- Town Centre Link Bridge successfully installed in three phases over the railway;
- bridges 12, 14 and 20 constructed and nearing substantial completion stage;
- all undertrack crossings constructed and available for services installation;
- Station Avenue retaining wall nearing substantial completion;
- road lowering at Warton Road completed; and
- northern Ticket Hall structure complete and fitting out in progress.

This project has a completion date of October 2010 and the project is on target to meet that date. Recent discussions have indicated further additional outputs may be specified.

Southampton to WCML W10 Gauge Enhancements

Current Project Stage: Construction, Testing and Implementation

Client: DfT, South East England Development Agency, Associated British Ports and Network Rail

The purpose of this project is to enhance the loading gauge to W10 from the Port of Southampton to the West Coast Mail Line at Nuneaton to enable 9'6" high containers to be transported on standard wagons. The route of the project is via Eastleigh, Reading, Oxford, Leamington Spa and Tyesely with a diversionary route from Coventry to Nuneaton.

This is a multi-funded project with contributions from DfT, South East England Development Agency, Associated British Ports and Network Rail.

The project scope consists of the reconstruction of 17 overbridges, 12 track lowers at overbridges, 4 track lowers in tunnels, 2 track lowers / slues at signals, 14 canopy modifications, 2 station platform modifications and Southampton Tunnel track lower/slab.

Progress in 2009/10

- Southampton Tunnel slab track was installed in January 2010. The possessions to undertake this work included shutting the down (southbound) line through the tunnel for most of December 2009 with bi-directional working over the up (northbound) line. There were total closures of both lines over weekends and midweek nights during this time. On 24 December a 10 day blockade of both lines was taken. The down line was reopened on 4 January 2010 with one week of bi-directional working. The up line were successfully reopened on 11 January, enabling both lines to be available and normal operations to resume. The work was originally planned to take place over two Christmas blockades. Network Rail worked with its contractors to reduce this to one Christmas closure, to reduce the impact on the customers;
- track lowering has been completed at the following sites: Kidlington, Sandy Lane, Radford Road, Harbury Tunnel, Popham Tunnels Nos 1 and 2. and Grange Road;
- eleven overbridges have been reconstructed, with 6 remaining;
- station canopy work has been completed at St. Denys, Winchester and Swaythling with all works due to be completed by September 2010; and

- overall work has proceeded mainly to programme. The exceptions being Westbury Lane overbridge which was listed by English Heritage prior to its' planned demolition in December 2010. A track lowering solution has now been developed for delivery in February 2011. There are also two bridges where the W10 track lowering solution has been amended to bridge reconstruction to deliver electrification clearances on the GWML. These bridges will be reconstructed over Christmas 2010.

This project has completion date of March 2011 and the project is on target to meet that date.

North South Wales Journey Time Reduction and Capacity Improvement Project

Current Project Stage: Option Selection

Client: Welsh Assembly Government

This project is to improve journey times and capacity between Holyhead and Cardiff via Wrexham and via Crewe. The client and funder for the scheme is the Welsh Assembly Government. The pre-feasibility study has been completed and has identified 6 infrastructure interventions which could deliver the outputs.

- double Saltney Junction & double track the line southwards (length to be determined by Railsys modelling);
- double track northwards from Wrexham General to Underbridge 540D;
- linespeed enhancements between Saltney Jcn and Wrexham General;
- installation of Intermediate Block Signals (IBS's) on Up and Down Lines between Wrexham and Shrewsbury;
- linespeed Enhancements between Gobowen and Shrewsbury (90mph); and
- installation of an Intermediate Block Signal on Up and Down Lines between Gaerwen and Valley signal boxes on the Isle of Anglesey North Wales Main Line.

During option selection timetable modelling will be carried out. The final scope of works will be agreed at the end of the option selection. It is likely that the single preferred option will be delivered in separate phases. The phases and the outputs for each phase will be determined by the client.

Progress in 2009/10

- pre-feasibility Early Output Report produced May 2009;
- Scott Wilson Railway appointed as Consultant to undertake option selection study;
- modelling work has identified Sectional Running Times for revised infrastructure; and
- Draft Option Selection Report has been produced.

The project is awaiting confirmation of client's timetable specification. The delay in providing this information is delaying the delivery of option selection which was originally planned to be complete by June 2010.

This project has a committed completion date of August 2014 and the project is currently on target to meet that date.

Connections to others infrastructure

Parkside Intermodal Freight Terminal

Current Project Stage: Option Selection

Client: ProLogis Ltd

This project relates to the possible construction of an intermodal freight terminal on the site of the old Parkside colliery. The project is being driven and funded by ProLogis Ltd, who have a number of terminals around the UK.

An option selection report was produced in April 2008, following which ProLogis expressed a desire to continue development work whilst the planning application for the scheme was being considered.

Progress in 2009/10

- the scope of a timetable modelling study has been agreed with the client, but not progressed, at their request;
- ground Investigation and other surveys have been carried out;
- no further work has been progressed since April 2009, at the request of the client, who has been focussing their efforts of the planning process; and
- in late February 2010 the client informed us that progress with the planning application had led to them revising their proposed terminal layout and that they may therefore ask us to revisit the options selected at some time in the future. A remit is expected in Autumn 2010.

Tees Valley Metro

Current Project Stage: Single Option development

Client: Tees Valley Unlimited

The first phase of the project is designed to enhance the rail link between the main centres of the Tees Valley through improved station facilities and enabling the operation of a regular local service. This includes new platforms at Darlington and Middlesbrough stations; relocation of the existing station at Durham Tees Valley Airport; station improvements at Eaglescliffe, Thornaby, Hartlepool and Redcar Central Stations, with a new station at James Cook University Hospital.

Progress in 2009/10

- the project commenced single option development in November 2009; and
- work completed prior to Invitation to Tender being issued in March 2010.

This project has a completion date of early 2013 and the project is on target to meet that date.

Metrolink 3A Programme

Current Project Stage: various see below

Client: Greater Manchester Passenger Transport Executive

This is a third party funded project by Greater Manchester Passenger Transport Executive (GMPTE) for the introduction of the third phase "3A" of Metrolink. This scheme involves the construction of new Metrolink routes from Manchester city centre to Oldham and Rochdale, Piccadilly to Droylsden and extensions out to Chorlton and Media City. This programme of works envelopes all heavy rail works required to facilitate the Metrolink expansion programme and includes the conversion, severance and transfer of ownership of the Oldham Loop from Network Rail to GMPTE.

Progress in 2009/10

Rochdale and Thorpes Bridge Severance

- Rochdale Severance (including 4 car turnback facility) commissioned in November 2009;
- Interim Severance at Thorpes Bridge commissioned October 2009; and
- Oldham Loop (Failsworth to Rochdale circa 14 miles of track) successfully handed ownership to GMPTE on the 5 October 2009 as planned.

Rochdale Enabling works

- single option development complete and detailed design, implementation, and scheme completion authorised in November 2009; and
- de-vegetation works, cable and signal wire relocations plus revised access strategy from GMPTE's contractor has enabled the designs to be shelved at detailed design stage and access to be made available. The works are no longer required and project to be closed out.

Rochdale Re-signalling

- revised scope to incorporate Smithy Bridge into the new signal box at Castleton and subsequent Network Rail level crossing renewal works approved in December 2009. Includes also simplified layout changes at Castleton. Benefits of synergies of delivery for improved efficiency and potential reduced cost to GMPTE.

This project has a completion date of Spring 2012 and the project is on target to meet that date.

Barking District Line Link

Current Project Stage: Project Close out

Client: London Underground Limited

This project provides a physical link between Network Rail's infrastructure and London Underground Limited's (LUL) infrastructure at Barking. LUL require the link to facilitate the transfer of GB Railfreight hauled engineering trains (Class 66) for the maintenance and renewals work for LUL's District Line.

The physical link and signalling has been constructed and commissioned; it is currently being used within possessions and managed on the ground by site staff.

Progress in 2009/10

- construction, testing and commissioning completed December 2009; and
- draft close out report completed.

Thameshaven branch line doubling

Current Project Stage: Single option development

Client: London Gateway Port

This project provides capacity enhancement to the existing single track Thameshaven branch line and is part of a wider scheme to construct a deep water intermodal port and logistics park adjacent to the Thameshaven branch line.

Network Rail is undertaking an asset protection role.

Progress in 2009/10

- the customer has completed option selection which has been reviewed and approved by Network Rail;
- single option development is nearing completion with Network Rail in the process of reviewing and approving the outline design; and
- significant progress in agreeing commercial and operational structures with London Gateway Port.

This project has a completion date of June 2013 and the project is on target to meet that date.

Conversion of the North London Line to Docklands Light Railway Operation

Current Project Stage: Detailed design, implementation, and scheme completion

Client: Docklands Light Railway

The project provides replacement platforms, subways and railway infrastructure to allow the London Overground service on the North London Line to run into the High Level station at Stratford. In exchange the Docklands Light Railway will take over the Low Level station platforms and construct their new light railway between Stratford International and Canning Town along the old North London Line corridor.

Progress in 2009/10

- snagging of replacement assets is on-going;
- provision of as-built drawings and Health and Safety files is on-going;
- high level platforms taken into use;
- Stratford International Substation commissioned; and
- Docklands Light Railway has taken occupation of land to construct their light railway.

East London Line Phase 1

Current Project Stage: Detailed design, implementation, and scheme completion

Client: Rail for London

The project provides enhanced infrastructure to allow the operation of a 4 train per hour service from the East London Line to Crystal Palace and West Croydon. It is key to improving transport links between East/South London and social/economic regeneration. Rail for London (RfL) are the funder for the project.

The works comprise:

- two new bay platforms at Crystal Palace with associated track and signalling alterations;
- a new turn back siding at West Croydon;
- connections between RfL and Network Rail controlled infrastructure at New Cross Gate; and
- provision of a crossover and new signalling at South Croydon to provide improved capacity in the Croydon area to accommodate the new timetable for East London Line services.

Progress in 2009/10

- the scheme has successfully commissioned works at New Cross Gate, Crystal Palace and West Croydon. ELL services are due to commence trial operations and driver training in April 2010 prior to full public service commencement with the May timetable. Network Rail is also now providing Network Operating under contract to RfL for their controlled infrastructure; and
- all key works have been delivered to enable services to commence operation. Some residual works remain to be implemented at South Croydon and these works will be complete by September 2010.

Other

Tram Train Project (Phase 2)

Current Project Stage: Option Selection

Client: Department for Transport

This project concerns the development and operation of a trial of light rail technology, known as “tram train”, on Network Rail infrastructure. The project is being managed as a joint programme with Department for Transport; Northern Rail; and South Yorkshire Passenger Transport Executive.

Phase 2 involves the through running of tram train vehicles between the Network Rail and South Yorkshire Supertram networks in Sheffield. When implemented the project will enable the operation of a through passenger service between Rotherham and Sheffield city centre.

Progress in 2009/10

- the feasibility work for the project has commenced;
- a Systems Integration Group has been formed by Network Rail, Northern Rail and South Yorkshire PTE to provide a forum within which to develop system compatibility;
- Network Rail and Northern Rail have consolidated their learning from the earlier phase of the project; and
- the project team provided evidence as part of an all party parliamentary enquiry into light rail in the UK.

This project has a completion date of June 2015 and is on target to meet that date.

Appendix 1 – Station stewardship measure – list of stations

The following tables provide a full list of the stations surveyed using the station stewardship measure (SSM) grouped by category of station. The measure assesses the condition of stations using a grading system from 1 to 5 with the lower the score the better the condition. For further details of the station stewardship measure and performance against the regulatory targets (the average scores for categories A – F and all stations in Scotland), please see Section 3 (Asset Management).

The stations are listed by category, where:

A = national hub
B = regional hub
C = important feeder
D = medium, staffed
E = small, staffed
F = small, unstaffed

Table A1.1: Station stewardship measure for category A

Station name	*Operating route*	*SSM*
Birmingham New Street	London North Western	2.72
Bristol Temple Meads	Western	2.31
Crewe	London North Western	2.79
Doncaster	London North Eastern	1.70
Gatwick Airport	Sussex	1.91
Glasgow Central	Scotland	1.95
Leeds	London North Eastern	2.28
Liverpool Lime Street (High Level)	London North Western	2.16
London Blackfriars	Sussex	2.42
London Charing Cross	Kent	2.08
London Euston	London North Western	2.90
London Fenchurch Street	Anglia	2.84
London Liverpool Street	Anglia	2.13
London Marylebone	London North Western	2.82
London Paddington	Western	2.41
London Victoria	Sussex	2.49
London Waterloo	Sussex	2.36
Newcastle	London North Eastern	2.51
Preston	London North Western	2.93
Reading	Western	2.27
Stockport	London North Western	2.13
York	London North Eastern	2.24

Table A1.2: Station stewardship measure for category B

Station name	*Operating route*	*SSM*
Ashford International*	Kent	1.43
Basingstoke	Wessex	2.42
Billericay	Anglia	3.03
Birmingham International	London North Western	2.43
Birmingham Moor Street	London North Western	2.15
Brentwood	Anglia	3.14
Brighton	Sussex	1.90
Bristol Parkway	Western	2.68
Cardiff Central	Western	2.54
Carlisle	London North Western	2.61
Chelmsford	Anglia	2.96
Clapham Junction	Wessex	2.19
Colchester	Anglia	2.04
Coventry	London North Western	2.49
Darlington	London North Eastern	2.54
Didcot Parkway	Western	2.45
East Croydon	Sussex	1.84
Glasgow Queen Street (High Level)	Scotland	1.77
Grantham	London North Eastern	2.33
Haywards Heath	Sussex	3.06
Huddersfield	London North Eastern	2.82
Hull	London North Eastern	1.72
Ilford	Anglia	2.68
Inverness	Scotland	2.04
Ipswich	Anglia	2.57
Kingston	Wessex	1.62
Lancaster	London North Western	2.62
Liverpool South Parkway	London North Western	2.38
London Waterloo East	Kent	3.11
Manchester Airport	London North Western	2.17
Manchester Victoria	London North Western	2.88
Milton Keynes Central	London North Western	2.87
Newark North Gate	London North Eastern	2.24
Newport (S. Wales)	Western	2.53
Norwich	Anglia	2.21
Nottingham	Midland & Continental	2.45
Oxford	Western	2.56
Perth	Scotland	2.39
Putney	Wessex	2.79
Raynes Park	Wessex	2.36
Richmond (Greater London)	Wessex	2.81
Romford	Anglia	2.14
Sheffield	London North Eastern	2.43
Shenfield	Anglia	2.67
Southampton Central	Wessex	2.77
Stansted Airport	Anglia	2.17
Stratford (London)(High Level)	Anglia	2.55
Stratford (London)(Low Level)	Anglia	2.55
Surbiton	Wessex	2.19

Table A1.2: Station stewardship measure for category B (continued)		
Station name	***Operating route***	***SSM***
Tonbridge	Kent	2.43
Twickenham	Wessex	2.68
Vauxhall (London)	Wessex	2.93
Wakefield Westgate	London North Eastern	2.77
Watford Junction	London North Western	2.93
Wigan North Western	London North Western	2.25
Wimbledon	Wessex	2.63
Winchester	Wessex	2.07
Woking	Wessex	2.28
Wolverhampton	London North Western	3.09

Table A1.3: Station stewardship measure for category C		
Station name	***Operating route***	***SSM***
Abbey Wood	Kent	2.01
Aldershot	Wessex	2.93
Altrincham	London North Western	2.84
Andover	Wessex	2.67
Ascot	Wessex	2.60
Ashford (Middlesex)	Wessex	2.89
Balham	Sussex	2.84
Banbury	London North Western	2.73
Barnes	Wessex	2.87
Barnsley	London North Eastern	2.02
Basildon	Anglia	2.54
Bath Spa	Western	2.66
Beckenham Junction	Kent	2.27
Bedford	Midland & Continental	2.20
Benfleet	Anglia	3.52
Berkhamsted	London North Western	3.02
Berwick-Upon-Tweed	London North Eastern	1.66
Bexleyheath	Kent	2.79
Birmingham Snow Hill	London North Western	2.89
Bishops Stortford	Anglia	2.65
Blackburn	London North Western	2.18
Blackpool North	London North Western	2.81
Bletchley	London North Western	2.70
Bolton	London North Western	2.57
Bracknell	Wessex	2.33
Braintree	Anglia	2.27
Bridgend	Western	2.45
Brookwood	Wessex	2.79
Burgess Hill	Sussex	2.74
Bury St Edmunds	Anglia	3.24
Cardiff Queen Street	Western	2.84
Chadwell Heath	Anglia	2.95
Chalkwell	Anglia	2.30
Chatham	Kent	2.00

Table A1.3: Station stewardship measure for category C (continued)

Station name	*Operating route*	*SSM*
Cheltenham Spa	Western	2.07
Cheshunt	Anglia	2.15
Chester	London North Western	2.66
Chesterfield	Midland & Continental	1.68
Chichester	Sussex	1.80
Chingford	Anglia	2.00
Chippenham	Western	2.37
Dalmuir	Scotland	2.04
Derby	Midland & Continental	2.37
Diss	Anglia	3.22
Dorking	Sussex	2.50
Dunbar	Scotland	2.19
Durham	London North Eastern	2.22
Ealing Broadway	Western	2.87
Earley	Wessex	2.83
East Grinstead	Sussex	2.69
Eastbourne	Sussex	2.60
Edmonton Green	Anglia	1.91
Egham	Wessex	2.78
Eltham	Kent	2.47
Enfield Town	Anglia	1.92
Epsom	Wessex	2.88
Ewell West	Wessex	1.62
Exeter St Davids	Western	2.43
Fareham	Wessex	1.94
Farnham	Wessex	2.69
Feltham	Wessex	2.60
Finsbury Park	London North Eastern	2.15
Fleet	Wessex	2.86
Folkestone Central	Kent	2.37
Forest Gate	Anglia	2.43
Forest Hill	Kent	2.18
Fratton*	Wessex	2.67
Gidea Park	Anglia	2.57
Gillingham (Kent)	Kent	2.52
Glasgow Central Low Level	Scotland	2.69
Godalming	Wessex	2.29
Goodmayes	Anglia	2.15
Gravesend	Kent	2.73
Grays	Anglia	2.41
Great Yarmouth	Anglia	2.15
Grove Park	Kent	2.16
Hampton Court	Wessex	3.18
Harold Wood	Anglia	2.85
Harrogate	London North Eastern	2.52
Haslemere	Wessex	2.12
Hassocks	Sussex	2.90
Hastings	Kent	2.13
Havant	Wessex	1.87
Hemel Hempstead	London North Western	2.89

Table A1.3: Station stewardship measure for category C (continued)		
Station name	***Operating route***	***SSM***
Hereford	Western	3.04
Herne Hill	Kent	2.03
Hertford North	London North Eastern	2.23
Highams Park	Anglia	3.27
Hitchin*	London North Eastern	1.95
Hither Green	Kent	2.31
Hockley	Anglia	2.47
Huntingdon	London North Eastern	1.85
Inverkeithing	Scotland	2.36
Kelvedon	Anglia	1.81
Kilwinning	Scotland	2.65
Kirkcaldy	Scotland	2.20
Laindon	Anglia	2.41
Leamington Spa	London North Western	2.67
Leatherhead	Wessex	2.57
Leicester	Midland & Continental	2.44
Leigh-on-Sea	Anglia	2.50
Leighton Buzzard	London North Western	2.76
Lewes	Sussex	2.18
Lincoln Central	London North Eastern	2.37
Liverpool Central	London North Western	2.71
Loughborough	Midland & Continental	2.36
Lowestoft	Anglia	2.07
Luton	Midland & Continental	3.56
Macclesfield	London North Western	2.44
Maidenhead	Western	2.71
Manchester Oxford Road	London North Western	2.83
Manningtree	Anglia	3.30
Manor Park	Anglia	2.72
Mortlake	Wessex	2.91
Motspur Park	Wessex	2.13
New Cross	Kent	1.63
New Eltham	Kent	2.97
Newbury	Western	2.58
Newton Abbot	Western	2.40
Norbiton	Wessex	2.31
Norbury	Sussex	2.04
Northampton	London North Western	2.77
Norwood Junction	Sussex	2.14
Nuneaton	London North Western	2.38
Oxted	Sussex	2.21
Paignton	Western	2.79
Paisley Gilmour Street	Scotland	2.04
Palmers Green	London North Eastern	2.11
Partick	Scotland	2.28
Penzance	Western	3.07
Petersfield	Wessex	2.13
Petts Wood	Kent	3.22
Pitsea	Anglia	2.25
Plymouth	Western	2.81

Table A1.3: Station stewardship measure for category C (continued)		
Station name	***Operating route***	***SSM***
Ponders End	Anglia	2.12
Poole	Wessex	2.47
Portsmouth & Southsea	Wessex	2.61
Portsmouth Harbour	Wessex	2.36
Potters Bar*	London North Eastern	1.99
Purley	Sussex	3.01
Queens Park (London)	London North Western	3.35
Rainham (Essex)	Anglia	2.43
Rayleigh	Anglia	2.98
Redhill	Sussex	2.89
Retford	London North Eastern	2.59
Rochdale	London North Western	2.86
Rochford	Anglia	2.43
Rugby	London North Western	2.84
Runcorn*	London North Western	2.82
Salford Crescent	London North Western	2.25
Salisbury	Wessex	2.58
Scarborough	London North Eastern	2.38
Seven Kings	Anglia	2.37
Shrewsbury	Western	2.55
Slough	Western	2.39
South Woodham Ferrers	Anglia	1.95
Southend Victoria	Anglia	2.66
St Austell	Western	2.88
St Margarets (Greater London)	Wessex	2.35
St Mary Cray	Kent	1.85
Stafford	London North Western	3.11
Staines*	Wessex	2.62
Staplehurst	Kent	2.69
Stevenage	London North Eastern	2.09
Stirling	Scotland	2.21
Stoke-on-Trent	London North Western	2.47
Stoneleigh	Wessex	2.80
Stowmarket	Anglia	2.59
Strawberry Hill	Wessex	3.03
Sunderland	London North Eastern	2.77
Sutton (Surrey)	Sussex	2.68
Swanley	Kent	2.07
Swansea	Western	3.09
Swindon	Western	2.51
Telford Central	London North Western	2.10
Thornton Heath	Sussex	2.54
Three Bridges	Sussex	1.91
Torquay	Western	2.69
Tring	London North Western	2.73
Truro	Western	2.89
Wallington	Sussex	3.44
Walthamstow Central	Anglia	2.32
Walton-On-Thames	Wessex	3.04
Wandsworth Town	Wessex	2.84

Table A1.3: Station stewardship measure for category C (continued)		
Station name	***Operating route***	***SSM***
Welwyn Garden City	London North Eastern	2.18
Wembley Central	London North Western	2.93
West Byfleet	Wessex	2.89
Weston-super-Mare	Western	2.77
Weybridge	Wessex	2.47
Weymouth	Wessex	2.51
Whitton	Wessex	2.32
Wickford	Anglia	2.32
Windsor & Eton Riverside	Wessex	2.10
Witham	Anglia	3.43
Wokingham	Wessex	2.83
Worcester Foregate Street	Western	2.55
Worcester Park	Wessex	2.59
Worcester Shrub Hill	Western	2.44

Table A1.4: Station stewardship measure for category D		
Station name	***Operating route***	***SSM***
Abergavenny	Western	2.50
Aberystwyth	Western	2.58
Airdrie	Scotland	2.21
Albany Park	Kent	2.42
Alexandra Palace	London North Eastern	2.18
Anniesland	Scotland	2.73
Arbroath	Scotland	2.20
Argyle Street	Scotland	2.63
Ash Vale	Wessex	2.21
Audley End	Anglia	3.38
Aviemore	Scotland	2.29
Axminster	Wessex	2.76
Aylesbury	London North Western	2.71
Bangor (Gwynedd)	London North Western	3.11
Barnham	Sussex	2.35
Barrow-in-Furness	London North Western	2.72
Battersea Park	Sussex	3.04
Battle	Kent	2.31
Beaconsfield	London North Western	3.25
Bearsted	Kent	2.56
Bicester North	London North Western	2.66
Biggleswade	London North Eastern	2.07
Birchwood	London North Western	2.75
Bishopbriggs	Scotland	2.47
Bodmin Parkway	Western	2.86
Bognor Regis	Sussex	2.89
Borough Green & Wrotham	Kent	1.93
Bradford Forster Square	London North Eastern	3.03
Bridlington	London North Eastern	2.40
Brockley	Kent	2.65

Table A1.4: Station stewardship measure for category D (continued)

Station name	*Operating route*	*SSM*
Bromley North	Kent	2.18
Burnham-On-Crouch	Anglia	3.03
Burton-on-Trent	Midland & Continental	2.93
Bush Hill Park	Anglia	2.01
Canterbury West	Kent	2.70
Catford	Kent	2.07
Charing Cross (Glasgow)	Scotland	2.17
Charlton	Kent	2.25
Cheadle Hulme	London North Western	2.79
Cheam	Sussex	2.45
Chelsfield	Kent	1.88
Chessington North	Wessex	2.90
Chislehurst	Kent	3.17
Chorley	London North Western	2.08
Clapton	Anglia	2.50
Claygate	Wessex	2.37
Clock House	Kent	2.29
Cobham & Stoke D'Abernon	Wessex	2.21
Cooden Beach	Kent	2.86
Cosham	Wessex	1.92
Coulsdon South	Sussex	3.29
Crayford	Kent	2.08
Crystal Palace	Sussex	2.01
Cuffley	London North Eastern	2.07
Cupar	Scotland	2.44
Dalston Kingsland	Anglia	2.40
Dawlish	Western	2.81
Denmark Hill	Kent	2.58
Dewsbury	London North Eastern	2.34
Dorchester South	Wessex	2.50
Dumfries	Scotland	2.23
Earlsfield	Wessex	2.43
Effingham Junction	Wessex	2.41
Elgin	Scotland	2.61
Elmers End	Kent	2.36
Elmstead Woods	Kent	3.18
Ely	Anglia	2.55
Enfield Chase	London North Eastern	1.99
Exmouth	Western	2.40
Falkirk Grahamston	Scotland	2.26
Farncombe	Wessex	1.71
Flitwick	Midland & Continental	1.94
Fort William	Scotland	2.55
Frome	Western	2.75
Gerrards Cross	London North Western	3.11
Gillingham (Dorset)	Wessex	2.62
Gordon Hill	London North Eastern	2.34
Gourock	Scotland	2.57
Greenwich	Kent	2.68
Grimsby Town*	London North Eastern	2.59

Table A1.4: Station stewardship measure for category D (continued)		
Station name	***Operating route***	***SSM***
Gunnersbury	Anglia	2.14
Halifax	London North Eastern	2.55
Hamilton Central	Scotland	2.66
Hamilton Square	London North Western	2.55
Hampton Wick	Wessex	2.59
Harlington	Midland & Continental	2.53
Harringay	London North Eastern	2.31
Hartford	London North Western	3.41
Hartlepool	London North Eastern	2.58
Hatfield Peverel	Anglia	2.83
Haverfordwest	Western	3.05
Hayes & Harlington	Western	2.50
Hayes (Kent)	Kent	2.48
Haymarket (Edinburgh)	Scotland	2.06
Hazel Grove	London North Western	2.49
Headcorn	Kent	2.28
Helensburgh Central	Scotland	2.27
Herne Bay	Kent	2.83
Hersham*	Wessex	2.79
Hexham	London North Eastern	2.67
High Brooms	Kent	2.47
Highbury & Islington (GN & City Line)(Low level)	London North Eastern	2.20
Hildenborough	Kent	2.46
Honiton	Wessex	2.68
Honor Oak Park	Kent	2.47
Horley	Sussex	2.61
Hornsey	London North Eastern	2.36
Horsley	Wessex	2.27
Hounslow	Wessex	2.64
Huyton	London North Western	3.06
Hyndland	Scotland	2.31
Ingatestone	Anglia	3.16
Irvine	Scotland	2.43
Johnstone	Scotland	2.43
Kemble	Western	3.09
Kensal Green	London North Western	3.07
Kensington Olympia	Sussex	2.43
Kent House	Kent	3.36
Kettering	Midland & Continental	2.72
Kew Gardens	Anglia	1.84
Kidbrooke	Kent	2.44
Kidderminster	London North Western	2.51
Kilmarnock	Scotland	2.55
Kings Lynn	Anglia	3.26
Kingussie	Scotland	2.64
Knutsford	London North Western	3.19
Lancing	Sussex	2.55
Leagrave	Midland & Continental	3.37
Lee	Kent	2.33
Letchworth Garden City	London North Eastern	1.97

Table A1.4: Station stewardship measure for category D (continued)

Station name	*Operating route*	*SSM*
Leuchars (for St. Andrews)	Scotland	1.98
Leyland	London North Western	2.47
Lichfield City	London North Western	2.41
Liphook	Wessex	2.68
Liskeard	Western	2.68
Liss	Wessex	2.72
Littlehampton	Sussex	2.67
London City Thameslink	Sussex	2.54
London Road (Guildford)	Wessex	1.77
Longfield	Kent	2.20
Luton Airport Parkway	Midland & Continental	2.28
Margate	Kent	3.45
Market Harborough	Midland & Continental	2.29
Marks Tey	Anglia	3.28
Martins Heron	Wessex	2.84
Maze Hill	Kent	2.47
Meadowhall	London North Eastern	2.18
Meopham	Kent	2.40
Merstham	Sussex	1.76
Mexborough*	London North Eastern	2.38
Mill Hill Broadway*	Midland & Continental	2.68
Milngavie	Scotland	2.50
Montrose	Scotland	2.21
Moorfields	London North Western	2.75
Mottingham	Kent	2.34
Mount Florida	Scotland	2.17
New Barnet	London North Eastern	2.22
New Cross Gate	Kent	2.69
Northallerton*	London North Eastern	2.20
Oakleigh Park	London North Eastern	2.31
Oban	Scotland	2.44
Ormskirk*	London North Western	2.06
Oxenholme Lake District	London North Western	2.54
Oxshott	Wessex	2.01
Penge East	Kent	2.47
Pitlochry	Scotland	2.36
Plumstead	Kent	2.16
Polegate	Sussex	2.79
Port Talbot Parkway	Western	2.49
Porth	Western	2.93
Portslade	Sussex	2.56
Prestatyn	London North Western	3.45
Preston Park	Sussex	2.20
Princes Risborough	London North Western	2.86
Pulborough	Sussex	2.50
Purfleet	Anglia	2.11
Purley Oaks	Sussex	2.78
Radlett	Midland & Continental	2.77
Ramsgate	Kent	2.20
Redditch	London North Western	3.26

Table A1.4: Station stewardship measure for category D (continued)

Station name	*Operating route*	*SSM*
Redruth	Western	2.79
Rhyl	London North Western	3.02
Royston	London North Eastern	1.98
Sandwell & Dudley	London North Western	3.15
Scunthorpe	London North Eastern	2.02
Seaford	Sussex	2.83
Selhurst	Sussex	2.60
Seven Sisters	Anglia	2.11
Shepperton	Wessex	2.37
Sherborne	Wessex	2.63
Shettleston	Scotland	2.65
Shipley	London North Eastern	2.59
Shoreham-by-Sea (Sussex)	Sussex	2.90
Shortlands	Kent	3.07
Singer	Scotland	2.19
Skipton	London North Eastern	2.95
Solihull	London North Western	2.68
South Croydon	Sussex	2.22
Southall	Western	2.69
Southend Central	Anglia	1.84
Southend East	Anglia	2.18
Southport	London North Western	2.67
St Albans	Midland & Continental	2.42
St Helens Central	London North Western	2.66
St James Street (Walthamstow)	Anglia	2.70
St Leonards Warrior Square	Kent	2.61
St Neots	London North Eastern	1.96
Stalybridge	London North Western	2.74
Stanford-Le-Hope	Anglia	2.38
Stonehaven	Scotland	1.99
Stourbridge Junction	London North Western	3.35
Stranraer	Scotland	2.47
Streatham	Sussex	3.07
Stroud	Western	2.86
Sunbury	Wessex	2.11
Sutton Coldfield	London North Western	2.17
Sydenham	Kent	2.54
Tamworth (HighLevel / Low Level)	London North Western	2.60
Teignmouth	Western	2.74
Theobalds Grove	Anglia	2.77
Thorpe Bay	Anglia	2.54
Tilbury Town	Anglia	2.40
Tiverton Parkway	Western	2.54
Todmorden	London North Western	3.31
Totnes	Western	2.34
Tottenham Hale	Anglia	2.07
Trowbridge	Western	2.80
Twyford	Western	3.02
Uckfield*	Sussex	2.51
University	London North Western	2.61

Table A1.4: Station stewardship measure for category D (continued)

Station name	*Operating route*	*SSM*
Virginia Water	Wessex	2.47
Waddon	Sussex	2.67
Walsall	London North Western	2.28
Wandsworth Common	Sussex	2.51
Ware	Anglia	2.22
Wareham	Wessex	2.51
Warrington Central	London North Western	2.55
Warwick	London North Western	2.92
Warwick Parkway	London North Western	2.21
Watford High Street	London North Western	2.71
Wellingborough	Midland & Continental	2.85
West Croydon	Sussex	3.37
West Malling	Kent	2.57
West Norwood	Sussex	2.53
West Wickham	Kent	2.11
West Worthing	Sussex	2.87
Westbury (Wilts)	Western	2.34
Westcombe Park	Kent	2.31
Westerton	Scotland	2.19
Whitstable	Kent	2.66
Wigan Wallgate	London North Western	2.56
Willesden Junction (High Level / Low Level)	Anglia	2.63
Wilmslow	London North Western	2.56
Winchfield	Wessex	2.13
Winchmore Hill	London North Eastern	2.01
Windsor & Eton Central	Western	2.75
Winnersh	Wessex	2.46
Wood Street	Anglia	2.42
Wrexham General	London North Western	2.96
Yeovil Junction	Wessex	2.24

Table A1.5: Station stewardship measure for category E		
Station name	***Operating route***	***SSM***
Aberdare	Western	2.93
Aberdour	Scotland	2.20
Accrington	London North Western	2.58
Acocks Green	London North Western	2.87
Acton Central	Anglia	2.70
Acton Main Line	Western	2.63
Adderley Park	London North Western	2.37
Adlington (Lancashire)	London North Western	2.38
Aigburth	London North Western	2.86
Ainsdale	London North Western	3.08
Aintree	London North Western	2.26
Alderley Edge	London North Western	2.82
Alexandria	Scotland	2.28
Alfreton	Midland & Continental	2.14
Alnmouth	London North Eastern	1.65
Alresford	Anglia	2.37
Anerley	Sussex	2.91
Angmering	Sussex	2.64
Appleby	London North Western	2.37
Apsley	London North Western	2.80
Ardrossan South Beach	Scotland	2.77
Arlesey	London North Eastern	1.97
Arundel	Sussex	2.36
Ash	Wessex	1.95
Ashton-Under-Lyne	London North Western	2.57
Ashwell & Morden	London North Eastern	2.68
Aston	London North Western	2.99
Atherton	London North Western	2.90
Aughton Park	London North Western	2.45
Aylesham	Kent	2.86
Baldock	London North Eastern	1.98
Balloch	Scotland	2.25
Bank Hall	London North Western	3.27
Bargoed	Western	2.85
Barming	Kent	1.81
Barmouth	Western	2.46
Barnstaple	Western	2.82
Barrhead	Scotland	2.56
Barrhill	Scotland	2.24
Barry	Western	2.55
Bearsden	Scotland	2.68
Bebington	London North Western	2.96
Beckenham Hill	Kent	2.97
Beeston	Midland & Continental	2.55
Bellingham	Kent	2.46
Bellshill	Scotland	2.49
Belvedere	Kent	1.98
Bentley (Hants.)	Wessex	1.85
Berkswell	London North Western	3.04

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Berrylands	Wessex	1.96
Berwick	Sussex	2.58
Beverley	London North Eastern	2.02
Bexhill	Kent	2.75
Bidston	London North Western	2.62
Billingshurst	Sussex	2.29
Bingley	London North Eastern	3.13
Birchington-On-Sea	Kent	2.30
Birkdale	London North Western	2.85
Birkenhead Central	London North Western	2.90
Birkenhead North	London North Western	2.50
Birkenhead Park	London North Western	2.50
Bishopton	Scotland	1.89
Blairhill	Scotland	2.98
Blake Street	London North Western	3.55
Blundellsands & Crosby	London North Western	3.04
Bookham	Wessex	2.19
Bootle New Strand	London North Western	3.01
Bosham	Sussex	2.58
Boston	London North Eastern	2.10
Bourne End	Western	3.02
Bournville	London North Western	2.94
Bowes Park	London North Eastern	2.08
Bramhall	London North Western	2.60
Bridgeton	Scotland	2.31
Bridgwater	Western	3.11
Bridgwater	Western	3.11
Brimsdown	Anglia	2.06
Brixton	Kent	2.31
Broad Green	London North Western	2.86
Broadstairs	Kent	2.18
Bromborough	London North Western	3.21
Bromborough Rake	London North Western	3.18
Bromley Cross	London North Western	2.43
Brondesbury	Anglia	1.88
Brookmans Park	London North Eastern	2.15
Brough	London North Eastern	1.93
Bruce Grove	Anglia	2.45
Brunswick	London North Western	1.61
Burnage	London North Western	2.45
Burnham	Western	3.06
Burnley Central	London North Western	2.54
Burntisland	Scotland	2.36
Bushey	London North Western	2.29
Butlers Lane	London North Western	2.70
Buxted	Sussex	2.66
Buxton	London North Western	2.52
Byfleet & New Haw	Wessex	3.20
Cadoxton	Western	2.89
Caledonian Road & Barnsbury	Anglia	2.46
Camborne	Western	3.00

Table A1.5: Station stewardship measure for category E (continued)

Station name	*Operating route*	*SSM*
Camden Road	Anglia	2.39
Canley	London North Western	2.39
Cardonald	Scotland	2.34
Carpenders Park	London North Western	3.36
Carshalton Beeches	Sussex	2.51
Carstairs	Scotland	2.30
Cartsdyke	Scotland	2.37
Cathcart	Scotland	1.94
Chafford Hundred	Anglia	2.32
Charlbury	Western	2.80
Chassen Road	London North Western	3.16
Cheddington	London North Western	2.72
Chessington South	Wessex	2.52
Chestfield & Swalecliffe	Kent	2.74
Chipstead	Sussex	1.67
Chiswick	Wessex	2.26
Cholsey	Western	3.07
Christs Hospital	Sussex	2.58
Clandon	Wessex	1.93
Clarkston	Scotland	2.09
Clydebank	Scotland	2.78
Coatbridge Sunnyside	Scotland	2.20
Colchester Town	Anglia	2.01
Coleshill Parkway	London North Western	2.02
Colwyn Bay	London North Western	2.76
Congleton	London North Western	2.23
Conway Park	London North Western	2.33
Cookham	Western	3.10
Coseley	London North Western	2.34
Cowdenbeath	Scotland	2.38
Cradley Heath	London North Western	2.93
Cressington	London North Western	2.63
Crewkerne	Wessex	2.39
Cricklewood	Midland & Continental	3.14
Croftfoot	Scotland	2.11
Crofton Park	Kent	2.67
Cross Gates	London North Eastern	2.56
Crosshill	Scotland	2.43
Crowborough	Sussex	2.69
Crowhurst	Kent	2.89
Crowthorne	Wessex	2.96
Croy	Scotland	2.26
Cumbernauld	Scotland	2.57
Cwmbran	Western	2.82
Dagenham Dock	Anglia	2.61
Daisy Hill	London North Western	2.73
Dalmeny	Scotland	2.21
Datchet	Wessex	3.15
Davenport	London North Western	2.88
Deal	Kent	2.50
Deansgate	London North Western	2.53

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Denham	London North Western	2.95
Deptford	Kent	3.20
Dingwall	Scotland	2.74
Disley	London North Western	2.96
Dormans	Sussex	2.22
Dorridge	London North Western	2.76
Dovercourt	Anglia	2.46
Downham Market	Anglia	2.98
Drayton Park	London North Eastern	1.93
Droitwich Spa	Western	2.68
Drumchapel	Scotland	2.95
Drumry	Scotland	2.73
Duddeston	London North Western	2.84
Dudley Port	London North Western	2.64
Dunblane	Scotland	2.18
Dunfermline Town	Scotland	2.01
Durrington-on-Sea	Sussex	3.06
Earlestown	London North Western	2.48
Earlswood (Surrey)	Sussex	2.28
East Dulwich	Kent	2.18
East Kilbride	Scotland	2.32
East Tilbury	Anglia	2.06
Easterhouse	Scotland	2.31
Eastham Rake	London North Western	3.06
Eccles	London North Western	2.11
Eccleston Park	London North Western	2.36
Edenbridge Town	Sussex	3.06
Edge Hill	London North Western	2.22
Ellesmere Port	London North Western	2.45
Elsenham	Anglia	3.08
Elstree & Borehamwood	Midland & Continental	2.57
Emsworth	Wessex	2.68
Enfield Lock	Anglia	2.01
Erdington	London North Western	2.33
Eridge	Sussex	2.73
Essex Road	London North Eastern	2.49
Evesham	Western	2.66
Exhibition Centre	Scotland	2.23
Farningham Road	Kent	2.53
Farnworth	London North Western	2.56
Fazakerley	London North Western	2.52
Finchley Road & Frognal	Anglia	1.84
Fishguard Harbour	Western	3.00
Five Ways	London North Western	2.85
Flint	London North Western	2.82
Flixton	London North Western	3.10
Folkestone Harbour	Kent	4.13
Folkestone West	Kent	1.81
Ford	Sussex	2.76
Formby	London North Western	2.80
Forres	Scotland	2.00

Table A1.5: Station stewardship measure for category E (continued)

Station name	*Operating route*	*SSM*
Four Oaks	London North Western	3.02
Frant	Kent	3.04
Freshfield	London North Western	2.38
Frimley	Wessex	2.26
Frinton-on-sea	Anglia	2.77
Fulwell	Wessex	2.56
Furze Platt	Western	3.21
Garforth	London North Eastern	2.21
Garrowhill	Scotland	2.44
Garscadden	Scotland	2.26
Garswood	London North Western	2.51
Gatley	London North Western	2.47
Giffnock	Scotland	1.97
Gipsy Hill	Sussex	2.32
Girvan	Scotland	2.79
Glasgow Queen Street (Low Level)	Scotland	2.44
Glazebrook	London North Western	2.61
Glengarnock	Scotland	2.80
Gobowen	Western	3.06
Goole	London North Eastern	2.33
Goring & Streatley	Western	2.13
Goring-by-Sea	Sussex	3.08
Gorton	London North Western	2.75
Gospel Oak	Anglia	2.80
Grange Park	London North Eastern	2.40
Grange-over-Sands	London North Western	2.42
Gravelly Hill	London North Western	2.35
Great Bentley	Anglia	2.66
Great Chesterford	Anglia	3.03
Great Missenden	London North Western	2.91
Green Lane	London North Western	2.75
Greenfield	London North Western	2.69
Greenock Central	Scotland	2.20
Greenock West	Scotland	2.20
Guide Bridge	London North Western	2.78
Haddenham & Thame Parkway	London North Western	2.69
Hadfield	London North Western	3.05
Hadley Wood	London North Eastern	2.12
Hag Fold	London North Western	2.66
Hagley	London North Western	3.39
Hale	London North Western	3.21
Halewood	London North Western	3.02
Hall Green	London North Western	2.78
Hall Road*	London North Western	2.98
Ham Street	Kent	2.75
Hamilton West	Scotland	2.52
Hampden Park	Sussex	2.60
Hampstead Heath	Anglia	2.40
Hampton-in-Arden	London North Western	2.82
Hamstead	London North Western	2.26
Hamworthy	Wessex	2.61

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Handforth	London North Western	2.31
Hanwell	Western	2.75
Harlesden	London North Western	2.79
Harlow Mill	Anglia	2.21
Harwich International	Anglia	1.99
Hatch End	London North Western	2.91
Hattersley	London North Western	2.49
Haydons Road	Sussex	1.89
Headstone Lane	London North Western	3.07
Heald Green	London North Western	3.03
Heaton Chapel	London North Western	2.52
Hebden Bridge	London North Eastern	2.58
Hendon	Midland & Continental	2.63
Henley-On-Thames	Western	2.92
Hertford East	Anglia	2.79
High Street (Glasgow)	Scotland	2.75
Higham	Kent	2.64
Hightown	London North Western	2.90
Hillington East	Scotland	2.29
Hillington West	Scotland	2.19
Hillside	London North Western	2.78
Hilsea	Wessex	2.80
Hinchley Wood	Wessex	2.47
Hinckley	Midland & Continental	2.60
Hindley	London North Western	3.17
Holmes Chapel	London North Western	2.96
Holyhead	London North Western	3.09
Homerton	Anglia	1.69
Hooton*	London North Western	3.22
Hough Green	London North Western	3.10
Hoylake	London North Western	2.33
Huntly	Scotland	2.16
Hunts Cross	London North Western	2.99
Hurst Green	Sussex	2.30
Ilkley	London North Eastern	2.55
Inverurie	Scotland	2.48
Iver	Western	2.51
James Street	London North Western	2.61
Jewellery Quarter	London North Western	2.51
Kearsney	Kent	3.08
Keith	Scotland	2.53
Kensal Rise	Anglia	2.48
Kenton	London North Western	2.91
Kidsgrove	London North Western	2.22
Kilburn High Road	London North Western	3.58
Kingham	Western	2.44
Kinghorn	Scotland	2.29
Kings Langley	London North Western	2.82
Kings Norton	London North Western	2.89
Kings Park	Scotland	2.31
Kingswood	Sussex	1.92

Table A1.5: Station stewardship measure for category E (continued)

Station name	*Operating route*	*SSM*
Kirkby	London North Western	3.00
Kirkdale	London North Western	1.83
Kirkham & Wesham	London North Western	2.46
Knebworth	London North Eastern	2.30
Knockholt	Kent	3.37
Kyle of Lochalsh	Scotland	2.82
Ladybank	Scotland	2.31
Ladywell	Kent	1.98
Lanark	Scotland	2.59
Langley	Western	2.48
Langley Green	London North Western	2.65
Larbert	Scotland	2.21
Largs	Scotland	2.15
Lea Green	London North Western	3.14
Lea Hall	London North Western	2.86
Leasowe	London North Western	2.41
Ledbury	Western	2.40
Levenshulme	London North Western	2.63
Lichfield Trent Valley (High Level / Low Level)	London North Western	2.64
Linlithgow	Scotland	2.36
Littleborough	London North Western	3.20
Littlehaven	Sussex	2.48
Llandaf	Western	3.26
Llandudno	London North Western	3.43
Llandudno Junction	London North Western	3.09
Llanelli	Western	3.14
Lockerbie	Scotland	2.16
London Road (Brighton)	Sussex	2.78
Long Buckby	London North Western	2.81
Long Eaton	Midland & Continental	2.47
Longbridge	London North Western	2.48
Lostock	London North Western	2.40
Loughborough Junction	Sussex	2.54
Lower Sydenham	Kent	2.91
Lye	London North Western	2.90
Lymington Town	Wessex	2.53
Machynlleth	Western	2.94
Maghull	London North Western	2.41
Maidstone West	Kent	2.36
Malden Manor	Wessex	2.81
Mallaig	Scotland	2.42
Malton	London North Eastern	2.13
Malvern Link	Western	2.56
Manor Road	London North Western	2.68
March	Anglia	3.55
Marston Green	London North Western	2.22
Martin Mill	Kent	2.27
Mauldeth Road	London North Western	2.49
Meldreth	Anglia	2.16
Melton Mowbray	Midland & Continental	2.44
Menston	London North Eastern	2.49

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Meols*	London North Western	2.65
Milford (Surrey)	Wessex	2.50
Mitcham Junction	Sussex	2.00
Moorgate	London North Eastern	2.45
Moorside	London North Western	2.75
Moreton (Merseyside)	London North Western	2.71
Moreton-in-Marsh	Western	2.59
Morpeth	London North Eastern	1.98
Mossley	London North Western	2.54
Mossley Hill	London North Western	3.09
Moulsecoomb	Sussex	2.67
Muirend	Scotland	2.56
Nairn	Scotland	2.38
Narborough	Midland & Continental	2.35
New Beckenham	Kent	2.79
New Brighton	London North Western	2.73
New Mills Central	London North Western	2.55
New Mills Newtown	London North Western	3.13
New Pudsey	London North Eastern	2.10
New Southgate	London North Eastern	2.57
Newhaven Town	Sussex	2.11
Newington	Kent	2.36
Newport (Essex)	Anglia	3.00
Newton (Lanarks)	Scotland	2.65
Newton For Hyde	London North Western	3.05
Newton-le-Willows	London North Western	2.97
Newtown (Powys)	Western	2.74
Normans Bay	Sussex	2.65
North Camp	Wessex	2.21
North Sheen	Wessex	2.83
North Wembley	London North Western	3.06
Northfield	London North Western	3.04
Northfleet	Kent	2.64
Northolt Park	London North Western	3.16
Northumberland Park	Anglia	2.08
Northwich	London North Western	3.20
Nunhead	Kent	1.96
Nutbourne	Sussex	2.81
Oakham	Midland & Continental	1.80
Ockendon	Anglia	2.16
Old Hill	London North Western	2.31
Old Roan	London North Western	2.86
Old Street	London North Eastern	2.17
Oldham Mumps	London North Western	2.17
Olton	London North Western	3.37
Orrell Park	London North Western	2.68
Overton	Wessex	2.03
Pangbourne	Western	2.01
Par	Western	2.82
Parbold	London North Western	2.61
Penarth	Western	2.64

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Penge West	Kent	2.21
Penrith	London North Western	2.18
Perry Barr	London North Western	2.37
Pevensey & Westham	Sussex	2.66
Pluckley	Kent	2.44
Plumpton	Sussex	2.62
Pollokshields East	Scotland	2.69
Polmont	Scotland	2.07
Port Glasgow	Scotland	2.44
Port Sunlight	London North Western	3.04
Portchester	Wessex	2.43
Poulton-Le-Fylde	London North Western	3.06
Poynton	London North Western	2.80
Prescot	London North Western	2.86
Prittlewell	Anglia	2.68
Pwllheli	Western	3.04
Queenborough	Kent	2.79
Queens Park (Glasgow)	Scotland	2.42
Queens Road, Peckham	Kent	2.44
Radyr	Western	2.54
Rainhill	London North Western	2.45
Ravensbourne	Kent	2.23
Rectory Road	Anglia	2.13
Redcar Central	London North Eastern	2.10
Reddish North	London North Western	2.59
Reedham (Surrey)	Sussex	2.10
Rice Lane	London North Western	2.67
Robertsbridge	Kent	2.77
Roby	London North Western	2.66
Rock Ferry	London North Western	2.94
Romiley	London North Western	2.54
Rose Hill Marple	London North Western	2.89
Rotherham Central	London North Eastern	2.65
Rowlands Castle	Wessex	2.94
Rowley Regis	London North Western	3.01
Roydon	Anglia	2.36
Runcorn East	London North Western	2.92
Ryde Esplanade	Wessex	2.21
Rye	Kent	2.58
Rye House	Anglia	2.31
Salford Central	London North Western	2.63
Salfords	Sussex	3.03
Saltcoats	Scotland	2.31
Sandbach	London North Western	2.59
Sandhills	London North Western	2.62
Sandling	Kent	2.76
Sandwich	Kent	1.97
Sandy	London North Eastern	2.01
Sankey for Penketh	London North Western	2.88
Sawbridgeworth	Anglia	2.28
Scotstounhill	Scotland	2.84

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Seaforth & Litherland	London North Western	2.47
Seer Green	London North Western	2.78
Selby*	London North Eastern	2.01
Selly Oak	London North Western	2.75
Settle	London North Western	2.30
Severn Tunnel Junction*	Western	3.08
Shanklin	Wessex	2.08
Shaw & Crompton	London North Western	2.18
Sheerness-on-Sea	Kent	2.93
Shelford	Anglia	3.02
Shenstone	London North Western	3.45
Shepherds Well	Kent	2.84
Shirley	London North Western	2.76
Shoeburyness	Anglia	2.83
Shotton (High Level)	London North Western	3.19
Shotton (Low Level)	London North Western	3.19
Shotts	Scotland	2.12
Skegness	London North Eastern	3.08
Slade Green	Kent	3.26
Sleaford	London North Eastern	2.49
Small Heath	London North Western	3.03
Smethwick Galton Bridge	London North Western	2.18
Smethwick Rolfe Street	London North Western	2.57
Smitham (for Coulsdon)*	Sussex	2.29
Sole Street	Kent	2.46
South Acton	Anglia	2.40
South Bermondsey	Kent	2.39
South Hampstead	London North Western	3.04
South Kenton	London North Western	3.31
Southbourne	Sussex	2.29
Southbury	Anglia	2.30
Southwick	Sussex	2.34
Spalding	London North Eastern	2.52
Spital	London North Western	3.02
Spring Road	London North Western	3.00
Springburn	Scotland	2.55
St Annes-on-the-Sea	London North Western	2.55
St Erth	Western	3.05
St Helens Junction	London North Western	2.72
St Johns	Kent	2.20
St Margarets (Hertfordshire)	Anglia	2.60
St Michaels	London North Western	2.60
Stamford	Midland & Continental	3.25
Stamford Hill	Anglia	2.16
Stansted Mountfitchet	Anglia	3.02
Stechford	London North Western	2.73
Stoke Mandeville	London North Western	2.68
Stoke Newington	Anglia	2.14
Stone Crossing	Kent	2.52
Stonebridge Park	London North Western	2.83
Stonehouse	Western	2.96

Table A1.5: Station stewardship measure for category E (continued)		
Station name	***Operating route***	***SSM***
Stourbridge Town	London North Western	3.24
Sturry	Kent	2.71
Sundridge Park	Kent	2.59
Swanscombe	Kent	2.34
Swanwick	Wessex	2.32
Sway	Wessex	2.53
Swaythling	Wessex	1.97
Swinton (Gtr. Manchester)	London North Western	2.87
Swinton (South Yorks.)	London North Eastern	2.50
Sydenham Hill	Kent	2.25
Tadworth	Sussex	2.33
Tal-y-Cafn	London North Western	3.08
Tame Bridge Parkway	London North Western	2.25
Taplow	Western	3.04
Tattenham Corner	Sussex	2.30
Templecombe	Wessex	2.46
Teynham	Kent	2.66
Thatcham	Western	2.28
Thatto Heath	London North Western	2.88
The Hawthorns	London North Western	2.62
Theale	Western	3.20
Thetford	Anglia	3.25
Thirsk	London North Eastern	1.98
Thorpe-Le-Soken	Anglia	1.96
Thurso	Scotland	2.15
Tile Hill	London North Western	2.86
Tilehurst	Western	2.70
Tipton	London North Western	2.71
Tisbury	Wessex	2.33
Tolworth	Wessex	2.63
Tooting	Sussex	2.56
Totton	Wessex	2.19
Town Green	London North Western	2.74
Trefforest	Western	2.51
Tyseley	London North Western	3.10
Uddingston	Scotland	2.56
Ulverston	London North Western	2.83
Upper Halliford	Wessex	2.60
Urmston	London North Western	2.76
Walkden	London North Western	2.72
Wallasey Grove Road	London North Western	2.67
Wallasey Village	London North Western	2.71
Walmer	Kent	2.93
Waltham Cross	Anglia	2.29
Walton (Merseyside)	London North Western	2.58
Walton-On-Naze	Anglia	2.48
Waterloo (Merseyside)*	London North Western	2.50
Watton-At-Stone	London North Eastern	2.09
Welham Green	London North Eastern	2.31
Wellington (Shropshire)	London North Western	2.84
Welwyn North	London North Eastern	2.01

Table A1.5: Station stewardship measure for category E (continued)

Station name	*Operating route*	*SSM*
Wemyss Bay	Scotland	2.68
Wendover	London North Western	2.77
West Allerton	London North Western	3.05
West Drayton	Western	2.58
West Dulwich	Kent	2.26
West Ealing	Western	2.16
West Hampstead	Anglia	2.10
West Hampstead Thameslink	Midland & Continental	2.22
West Horndon	Anglia	3.28
West Kirby	London North Western	3.02
West St Leonards	Kent	2.64
West Sutton	Sussex	2.30
Westgate-On-Sea	Kent	2.13
Whaley Bridge	London North Western	3.30
Whiston	London North Western	2.52
Whitchurch (Hants.)	Wessex	2.26
White Hart Lane	Anglia	2.57
Whitecraigs	Scotland	2.27
Whitehaven	London North Western	2.17
Whittlesford Parkway	Anglia	2.89
Whyteleafe South	Sussex	2.82
Wick	Scotland	2.12
Widnes	London North Western	2.62
Widney Manor	London North Western	2.74
Williamwood	Scotland	2.17
Windermere	London North Western	2.39
Winnersh Triangle	Wessex	2.52
Wishaw	Scotland	2.32
Witley	Wessex	2.11
Witton	London North Western	2.21
Wivelsfield	Sussex	2.57
Wivenhoe	Anglia	2.02
Wolverton	London North Western	2.91
Woodmansterne	Sussex	2.07
Woodsmoor	London North Western	2.46
Wool	Wessex	2.19
Woolston	Wessex	2.29
Woolwich Dockyard	Kent	3.18
Workington	London North Western	2.98
Worksop	London North Eastern	1.86
Worplesdon	Wessex	1.99
Wye	Kent	2.82
Wythall	London North Western	3.02
Yardley Wood	London North Western	2.68
Yatton	Western	2.54
Yeovil Pen Mill	Wessex	2.83

Table A1.6: Station stewardship measure for category F

Station name	*Operating route*	*SSM*
Aber	Western	2.81
Aberdovey	Western	2.62
Abererch	Western	2.27
Abergele & Pensarn	London North Western	3.26
Achanalt	Scotland	2.67
Achnasheen	Scotland	2.42
Achnashellach	Scotland	2.09
Acklington	London North Eastern	2.01
Acton Bridge	London North Western	3.10
Addiewell	Scotland	2.54
Adlington (Cheshire)	London North Western	2.50
Adwick	London North Eastern	2.04
Airbles	Scotland	2.06
Albrighton	London North Western	3.04
Aldermaston	Western	2.52
Aldrington	Sussex	2.74
Alexandra Parade	Scotland	2.38
Allens West	London North Eastern	2.51
Alness	Scotland	2.94
Alsager	London North Western	2.62
Althorne	Anglia	1.76
Althorpe	London North Eastern	2.25
Altnabreac	Scotland	2.63
Alvechurch	London North Western	3.23
Ambergate	Midland & Continental	1.77
Amberley	Sussex	2.54
Ammanford	Western	2.91
Ancaster	London North Eastern	2.08
Angel Road	Anglia	2.23
Annan	Scotland	2.64
Ansdell & Fairhaven	London North Western	2.35
Appledore	Kent	2.97
Appleford	Western	2.83
Appley Bridge	London North Western	2.30
Ardgay	Scotland	2.22
Ardlui	Scotland	2.42
Ardrossan Harbour	Scotland	2.61
Ardrossan Town	Scotland	2.72
Ardwick	London North Western	2.86
Arisaig	Scotland	2.54
Armathwaite	London North Western	2.42
Arnside	London North Western	2.50
Arram	London North Eastern	2.14
Arrochar & Tarbet	Scotland	2.18
Ascott-Under-Wychwood	Western	3.00
Ashburys	London North Western	2.93
Ashchurch for Tewkesbury	Western	2.05
Ashfield	Scotland	2.27

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Ashley	London North Western	3.14
Ashurst	Sussex	2.92
Askam	London North Western	2.99
Aslockton	Midland & Continental	2.28
Aspatria	London North Western	3.23
Aspley Guise	London North Western	2.42
Atherstone	London North Western	2.52
Attadale	Scotland	2.32
Attenborough	Midland & Continental	2.24
Attleborough	Anglia	3.44
Auchinleck	Scotland	2.59
Avoncliff	Western	3.06
Avonmouth	Western	2.97
Aylesford	Kent	2.42
Bache	London North Western	2.42
Baglan	Western	2.51
Bagshot	Wessex	2.72
Baildon	London North Eastern	1.89
Baillieston	Scotland	1.97
Balmossie	Scotland	2.76
Bamber Bridge	London North Western	2.17
Bamford	London North Western	2.53
Banavie	Scotland	2.10
Banstead	Sussex	2.93
Barassie	Scotland	2.24
Bardon Mill	London North Eastern	2.08
Bare Lane	London North Western	2.96
Bargeddie	Scotland	2.21
Barlaston	London North Western	2.50
Barnes Bridge	Wessex	2.72
Barnetby	London North Eastern	2.03
Barnhill	Scotland	2.49
Barnt Green	London North Western	2.40
Barrow Haven	London North Eastern	2.09
Barrow Upon Soar	Midland & Continental	2.46
Barry Docks	Western	2.70
Barry Island	Western	3.11
Barry Links	Scotland	2.35
Barton-On-Humber	London North Eastern	1.92
Bat & Ball	Kent	2.17
Bathgate	Scotland	1.93
Batley	London North Eastern	1.87
Battersby	London North Eastern	3.02
Battlesbridge	Anglia	2.62
Bayford	London North Eastern	1.99
Bearley	London North Western	3.29
Beasdale	Scotland	2.43
Beauly	Scotland	2.52
Beccles	Anglia	2.42
Bedford St Johns	London North Western	2.68

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Bedminster	Western	2.73
Bedworth	London North Western	3.31
Bedwyn	Western	2.72
Bekesbourne	Kent	2.80
Belle Vue	London North Western	2.72
Bellgrove	Scotland	2.45
Belmont	Sussex	2.27
Belper	Midland & Continental	2.38
Beltring	Kent	3.22
Bempton	London North Eastern	2.19
Ben Rhydding	London North Eastern	2.27
Bentham	London North Western	2.82
Bentley (S. Yorks)	London North Eastern	1.78
Bere Alston	Western	2.96
Bere Ferrers	Western	2.38
Berney Arms	Anglia	2.55
Berry Brow	London North Eastern	2.48
Bescar Lane	London North Western	2.23
Betchworth	Sussex	3.02
Bethnal Green	Anglia	3.16
Betws-Y-Coed*	London North Western	2.83
Bicester Town	Western	2.42
Bilbrook	London North Western	2.86
Billingham	London North Eastern	2.13
Bingham	Midland & Continental	2.08
Birkbeck	Kent	1.81
Bishop Auckland	London North Eastern	2.05
Bishopstone	Sussex	2.89
Blackhorse Road	Anglia	2.21
Blackpool Pleasure Beach	London North Western	3.27
Blackpool South	London North Western	2.70
Blackrod	London North Western	2.10
Blackwater	Wessex	1.93
Blaenau Ffestiniog	London North Western	2.91
Blair Atholl	Scotland	2.47
Blakedown	London North Western	3.29
Blaydon	London North Eastern	2.94
Bleasby	Midland & Continental	2.24
Bloxwich	London North Western	2.42
Bloxwich North	London North Western	2.35
Blythe Bridge	Midland & Continental	2.92
Bodorgan*	London North Western	3.25
Bogston	Scotland	2.42
Bolton-On-Dearne	London North Eastern	2.58
Bootle	London North Western	2.29
Bordesley	London North Western	2.82
Borth	Western	2.74
Bottesford	London North Eastern	2.44
Bow Brickhill	London North Western	3.32
Bowling	Scotland	2.77

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Boxhill & Westhumble	Sussex	3.02
Braintree Freeport	Anglia	2.07
Bramley	London North Eastern	2.38
Bramley (Hants)	Wessex	2.13
Brampton (Cumbria)	London North Eastern	2.51
Brampton (Suffolk)	Anglia	3.41
Branchton	Scotland	2.49
Brandon	Anglia	2.44
Braystones	London North Western	2.75
Breich	Scotland	2.79
Brentford	Wessex	1.88
Bricket Wood	London North Western	3.03
Bridge of Allan	Scotland	2.19
Bridge Of Orchy	Scotland	2.14
Brierfield	London North Western	2.75
Brigg	London North Eastern	2.63
Brighouse	London North Eastern	2.60
Brithdir	Western	2.13
Briton Ferry	Western	2.47
Brockholes	London North Eastern	3.12
Bromsgrove	Western	2.47
Broome	Western	2.96
Broomfleet	London North Eastern	2.33
Brora	Scotland	2.30
Broughty Ferry	Scotland	2.36
Brundall	Anglia	3.32
Brundall Gardens	Anglia	3.38
Brunstane	Scotland	1.61
Bruton	Western	2.83
Bryn	London North Western	2.76
Buckley	London North Western	3.16
Bucknell	Western	3.05
Bugle	Western	2.96
Builth Road	Western	2.87
Bulwell	Midland & Continental	2.26
Bures	Anglia	2.82
Burley Park	London North Eastern	2.67
Burley-in-Wharfedale	London North Eastern	2.70
Burneside	London North Western	2.08
Burnley Barracks	London North Western	2.66
Burnley Manchester Road	London North Western	2.50
Burscough Bridge	London North Western	2.21
Burscough Junction	London North Western	3.04
Burton Joyce	Midland & Continental	2.20
Busby	Scotland	2.30
Bynea	Western	2.37
Caergwrle	London North Western	2.81
Caersws	Western	2.65
Calstock	Western	3.13
Cambridge Heath	Anglia	3.56

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Camelon	Scotland	2.02
Cannock	London North Western	2.26
Cantley	Anglia	3.08
Capenhurst	London North Western	2.62
Cardenden	Scotland	2.14
Cardross	Scotland	2.51
Carfin	Scotland	2.13
Cark	London North Western	2.38
Carlton	Midland & Continental	2.33
Carluke	Scotland	2.28
Carmyle	Scotland	2.25
Carnforth	London North Western	2.78
Carnoustie	Scotland	1.92
Carntyne	Scotland	2.60
Carrbridge	Scotland	1.94
Castleford	London North Eastern	2.02
Castleton (Greater Manchester)	London North Western	2.66
Castleton Moor	London North Eastern	2.63
Cathays	Western	2.81
Cattal	London North Eastern	2.22
Causeland	Western	2.72
Cefn-Y-Bedd	London North Western	2.93
Chandlers Ford	Wessex	2.17
Chapel-en-le-Frith	London North Western	3.04
Chapeltown	London North Eastern	2.33
Chapleton	Western	2.83
Chartham	Kent	2.60
Chatelherault	Scotland	1.68
Chathill	London North Eastern	3.18
Chelford	London North Western	2.32
Cherry Tree	London North Western	2.62
Chester-Le-Street	London North Eastern	2.02
Chetnole	Wessex	2.57
Chilham	Kent	3.10
Chilworth	Wessex	2.10
Chinley	London North Western	2.70
Chirk	Western	3.17
Church & Oswaldtwistle	London North Western	2.60
Church Fenton	London North Eastern	2.97
Church Stretton	Western	2.04
Cilmeri	Western	2.07
Clapham	London North Western	3.08
Clapham High Street	Kent	2.64
Clarbeston Road	Western	3.16
Claverdon	London North Western	3.46
Cleland	Scotland	2.49
Clifton	London North Western	2.95
Clifton Down	Western	2.83
Clitheroe	London North Western	2.19
Clunderwen	Western	2.94

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Coatbridge Central	Scotland	2.87
Coatdyke	Scotland	3.07
Codsall	London North Western	2.94
Cogan	Western	2.94
Collingham	London North Eastern	2.41
Colne	London North Western	2.54
Colwall	Western	2.69
Combe	Western	2.94
Commondale	London North Eastern	1.69
Conisbrough	London North Eastern	2.67
Connel Ferry	Scotland	2.42
Cononley	London North Eastern	1.88
Conwy	London North Western	3.00
Cooksbridge	Sussex	2.32
Coombe	Western	2.96
Copplestone	Western	3.02
Corbridge	London North Eastern	2.98
Corkerhill	Scotland	2.11
Corkickle	London North Western	2.77
Corpach	Scotland	3.25
Corrour	Scotland	3.05
Coryton	Western	2.90
Cosford	London North Western	2.88
Cottingham	London North Eastern	2.28
Cottingley	London North Eastern	2.27
Cowden	Sussex	3.20
Craigendoran	Scotland	2.63
Cramlington	London North Eastern	1.83
Craven Arms	Western	3.15
Crediton	Western	2.83
Cressing	Anglia	2.10
Creswell	London North Eastern	1.91
Crews Hill	London North Eastern	1.89
Crianlarich	Scotland	2.40
Criccieth	Western	2.80
Cromer	Anglia	3.28
Cromford	Midland & Continental	2.12
Crookston	Scotland	2.13
Crossflatts	London North Eastern	2.74
Crossmyloof	Scotland	2.19
Croston	London North Western	2.71
Crouch Hill	Anglia	2.59
Crowle	London North Eastern	2.38
Cuddington	London North Western	3.10
Culham	Western	2.87
Culrain	Scotland	2.22
Curriehill	Scotland	2.09
Cuxton	Kent	2.18
Cwmbach	Western	2.77
Cynghordy	Western	2.28

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Dalgety Bay	Scotland	2.09
Dalmally	Scotland	2.77
Dalry	Scotland	2.80
Dalston (Cumbria)	London North Western	2.26
Dalton	London North Western	3.03
Dalwhinnie	Scotland	2.41
Danby	London North Eastern	1.97
Danzey	London North Western	3.05
Darnall	London North Eastern	2.52
Darsham	Anglia	2.31
Darton	London North Eastern	2.20
Darwen	London North Western	2.63
Dawlish Warren	Western	2.59
Dean Lane	London North Western	2.70
Deganwy	London North Western	3.32
Deighton	London North Eastern	3.00
Delamere	London North Western	3.06
Denby Dale	London North Eastern	2.37
Denham Golf Club	London North Western	2.97
Dent	London North Western	2.28
Denton	London North Western	3.09
Derby Road (Ipswich)	Anglia	2.85
Derker	London North Western	1.32
Devonport	Western	2.59
Dilton Marsh	Western	2.68
Dinas Powys	Western	2.88
Dinas Rhondda	Western	2.95
Dingle Road	Western	3.01
Dinsdale	London North Eastern	2.05
Dockyard (Devonport)	Western	2.74
Dodworth	London North Eastern	1.78
Dolau	Western	2.80
Doleham	Kent	3.04
Dolgarrog	London North Western	3.00
Dolwyddelan*	London North Western	3.35
Dorchester West	Wessex	2.39
Dore	London North Eastern	2.15
Dorking Deepdene	Sussex	2.86
Dorking West	Sussex	2.39
Dove Holes	London North Western	2.93
Dovey Junction	Western	2.14
Drem	Scotland	2.48
Driffield	London North Eastern	2.14
Drigg	London North Western	2.11
Dronfield	London North Eastern	1.96
Drumfrochar	Scotland	2.47
Drumgelloch	Scotland	2.99
Duffield	Midland & Continental	2.15
Duirinish	Scotland	2.81
Duke Street	Scotland	2.30

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Dullingham	Anglia	3.04
Dumbarton East	Scotland	2.71
Dumbreck	Scotland	2.36
Dunbridge	Wessex	2.68
Duncraig	Scotland	2.31
Dunfermline Queen Margaret	Scotland	2.56
Dunkeld & Birnam	Scotland	2.24
Dunlop	Scotland	2.10
Dunrobin Castle	Scotland	2.51
Dunston	London North Eastern	1.82
Dyce	Scotland	2.35
Dyffryn Ardudwy	Western	2.13
Eaglescliffe	London North Eastern	2.34
Earlswood (West Midlands)	London North Western	2.61
East Farleigh	Kent	2.33
East Garforth	London North Eastern	2.36
East Malling	Kent	2.45
East Worthing	Sussex	2.70
Eastbrook	Western	2.43
Eastrington	London North Eastern	2.03
Eccles Road	Anglia	3.30
Edale	London North Western	2.73
Edenbridge	Kent	2.94
Edinburgh Park	Scotland	1.70
Eggesford	Western	2.48
Egton	London North Eastern	2.00
Elmswell	Anglia	2.51
Elsecar	London North Eastern	2.25
Elton & Orston	Midland & Continental	2.39
Emerson Park	Anglia	2.70
Entwistle	London North Western	2.52
Epsom Downs	Sussex	2.04
Euxton Balshaw Lane	London North Western	2.18
Exeter St Thomas	Western	2.63
Failsworth	London North Western	2.71
Fairbourne	Western	2.63
Fairfield	London North Western	3.08
Fairlie	Scotland	2.72
Falls Of Cruachan	Scotland	2.66
Falmouth Docks	Western	3.02
Falmouth Town	Western	2.69
Fauldhouse	Scotland	2.60
Faygate	Sussex	2.11
Fearn	Scotland	2.90
Featherstone	London North Eastern	2.21
Felixstowe	Anglia	3.55
Fenny Stratford	London North Western	2.99
Fernhill	Western	2.85
Ferriby	London North Eastern	2.23
Ferryside	Western	3.12

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Ffairfach	Western	2.36
Filey	London North Eastern	2.93
Filton Abbey Wood	Western	2.11
Finstock	Western	2.96
Fishbourne	Sussex	2.02
Fiskerton	Midland & Continental	2.30
Fitzwilliam	London North Eastern	2.26
Flimby	London North Western	2.22
Flowery Field	London North Western	2.51
Forsinard	Scotland	2.53
Fort Matilda	Scotland	2.43
Foxfield	London North Western	2.75
Foxton	Anglia	2.81
Freshford	Western	2.10
Frizinghall	London North Eastern	2.44
Frodsham	London North Western	2.98
Furness Vale	London North Western	2.83
Gainsborough Central	London North Eastern	2.62
Gainsborough Lea Road	London North Eastern	2.14
Garelochhead	Scotland	2.45
Gargrave	London North Eastern	1.91
Garsdale	London North Western	2.40
Garston (Hertfordshire)	London North Western	2.49
Gartcosh	Scotland	1.82
Garth (Mid Glamorgan)	Western	2.40
Garth (Powys)	Western	2.51
Garve	Scotland	2.46
Gathurst	London North Western	2.98
Georgemas Junction	Scotland	2.38
Giggleswick	London North Western	2.21
Gilberdyke	London North Eastern	2.31
Gilshochill	Scotland	2.48
Glaisdale	London North Eastern	2.06
Glan Conwy	London North Western	2.92
Glasshoughton	London North Eastern	1.74
Gleneagles	Scotland	2.25
Glenfinnan	Scotland	2.33
Glenrothes with Thornton	Scotland	1.97
Glynde	Sussex	2.65
Godley	London North Western	3.01
Godstone	Kent	3.09
Goldthorpe	London North Eastern	2.41
Golf Street	Scotland	2.40
Golspie	Scotland	2.28
Gomshall	Wessex	2.31
Goostrey	London North Western	2.63
Gowerton	Western	3.07
Goxhill	London North Eastern	1.91
Grangetown	Western	2.38
Grateley	Wessex	2.07

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Great Ayton	London North Eastern	2.08
Great Coates	London North Eastern	2.19
Green Road	London North Western	2.62
Greenbank	London North Western	2.97
Greenfaulds	Scotland	2.39
Gretna Green	Scotland	2.81
Grimsby Docks	London North Eastern	2.34
Grindleford	London North Western	2.96
Grosmont	London North Eastern	2.15
Guiseley	London North Eastern	1.84
Gunnislake	Western	2.75
Gunton	Anglia	2.09
Gwersyllt	London North Western	3.08
Gypsy Lane	London North Eastern	2.43
Habrough	London North Eastern	2.37
Haddiscoe	Anglia	2.03
Hairmyres	Scotland	1.88
Hall i' th' Wood	London North Western	1.85
Halling	Kent	3.17
Haltwhistle	London North Eastern	2.58
Hammerton	London North Eastern	2.13
Hanborough	Western	2.64
Hapton	London North Western	2.77
Harlech	Western	3.01
Harling Road	Anglia	2.16
Harringay Green Lanes	Anglia	2.35
Harrington	London North Western	3.13
Hartlebury	London North Western	2.62
Hartwood	Scotland	2.48
Harwich Town	Anglia	2.71
Hatfield & Stainforth	London North Eastern	1.49
Hathersage	London North Western	2.30
Hatton (Warwickshire)	London North Western	2.66
Havenhouse	London North Eastern	2.83
Hawarden	London North Western	3.18
Hawarden Bridge	London North Western	3.16
Hawkhead	Scotland	2.41
Haydon Bridge	London North Eastern	2.94
Hayle	Western	3.00
Headingley	London North Eastern	2.11
Healing	London North Eastern	2.45
Heckington	London North Eastern	1.83
Hednesford	London North Western	2.48
Heighington	London North Eastern	2.69
Helensburgh Upper	Scotland	2.79
Hellifield	London North Western	2.60
Helmsdale	Scotland	2.13
Helsby	London North Western	3.12
Henley-in-Arden	London North Western	3.07
Hensall	London North Eastern	2.47

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Hessle	London North Eastern	2.50
Heswall	London North Western	2.95
Hever	Sussex	2.27
Heworth	London North Eastern	2.34
Heyford	London North Western	2.55
Heysham Port	London North Western	2.70
Highbridge & Burnham-On-Sea	Western	2.64
Highbury & Islington (North London Line)(High Level)	Anglia	2.61
Hillfoot	Scotland	2.99
Hollinwood	London North Western	2.33
Holmwood	Sussex	2.47
Holton Heath	Wessex	2.22
Holytown	Scotland	2.68
Honeybourne	Western	2.41
Honley	London North Eastern	2.84
Hope (Derbyshire)	London North Western	2.46
Hope (Flintshire)	London North Western	2.77
Hopton Heath	Western	3.50
Hornbeam Park	London North Eastern	2.40
Horsforth	London North Eastern	2.43
Horton-in-Ribblesdale	London North Western	2.46
Horwich Parkway	London North Western	2.32
Hoscar	London North Western	2.69
Hoveton & Wroxham	Anglia	2.80
How Wood (Herts)	London North Western	2.90
Howden	London North Eastern	2.35
Howwood (Renfrewshire)	Scotland	2.82
Hubberts Bridge	London North Eastern	1.92
Hucknall	Midland & Continental	2.12
Humphrey Park	London North Western	2.82
Huncoat	London North Western	2.51
Hungerford	Western	2.73
Hunmanby	London North Eastern	2.12
Hutton Cranswick	London North Eastern	2.54
Hyde Central	London North Western	2.86
Hyde North	London North Western	2.68
Hykeham	London North Eastern	2.50
Hythe (Essex)	Anglia	2.64
IBM	Scotland	2.43
Ince	London North Western	3.09
Ince & Elton	London North Western	2.78
Insch	Scotland	2.41
Invergordon	Scotland	2.24
Invergowrie	Scotland	2.42
Inverkip	Scotland	2.14
Invershin	Scotland	2.45
Irlam	London North Western	2.94
Islip	Western	2.31
Ivybridge	Western	2.45
Johnston	Western	3.29

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Jordanhill	Scotland	2.76
Kearsley	London North Western	2.48
Kelvindale	Scotland	1.77
Kempston Hardwick	London North Western	2.66
Kemsing	Kent	2.33
Kemsley	Kent	2.69
Kendal	London North Western	2.55
Kennett	Anglia	3.41
Kennishead	Scotland	2.61
Kentish Town	Midland & Continental	2.46
Kents Bank	London North Western	2.94
Keyham	Western	2.88
Keynsham	Western	2.69
Kidwelly	Western	3.15
Kildale	London North Eastern	1.81
Kildonan	Scotland	2.39
Kilgetty	Western	3.25
Kilmaurs	Scotland	2.21
Kilpatrick	Scotland	2.31
Kinbrace	Scotland	2.55
Kings Nympton	Western	2.47
Kings Sutton	London North Western	2.70
Kingsknowe	Scotland	2.42
Kintbury	Western	2.71
Kirby Cross	Anglia	2.75
Kirk Sandall	London North Eastern	1.68
Kirkby in Ashfield	Midland & Continental	1.83
Kirkby Stephen	London North Western	2.28
Kirkby-in-Furness	London North Western	2.68
Kirkconnel	Scotland	2.87
Kirkhill	Scotland	2.69
Kirknewton	Scotland	2.32
Kirkwood	Scotland	2.18
Kirton Lindsey	London North Eastern	2.11
Kiveton Bridge	London North Eastern	1.88
Kiveton Park	London North Eastern	2.29
Knaresborough	London North Eastern	2.30
Knighton	Western	2.46
Knottingley	London North Eastern	2.76
Knucklas	Western	3.04
Lairg	Scotland	2.00
Lake	Wessex	3.02
Lakenheath	Anglia	2.35
Lamphey	Western	3.34
Landywood	London North Western	2.80
Langbank	Scotland	2.16
Langho	London North Western	2.74
Langley Mill	Midland & Continental	2.37
Langside	Scotland	2.20
Langwathby	London North Western	2.91

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Langwith – Whaley Thorns	London North Eastern	2.01
Lapford	Western	2.60
Lapworth	London North Western	2.66
Larkhall	Scotland	2.07
Laurencekirk	Scotland	3.55
Lawrence Hill	Western	2.75
Layton	London North Western	2.40
Lazonby & Kirkoswald	London North Western	2.90
Lealholm	London North Eastern	2.51
Leigh (Kent)	Kent	2.75
Leominster	Western	3.23
Leyton Midland Road	Anglia	2.71
Leytonstone High Road	Anglia	3.24
Lidlington	London North Western	2.86
Lingwood	Anglia	2.00
Lisvane & Thornhill	Western	2.44
Little Kimble	London North Western	2.95
Little Sutton	London North Western	2.68
Littleport	Anglia	2.97
Livingston North	Scotland	2.22
Livingston South	Scotland	2.58
Llanaber	Western	2.20
Llanbedr	Western	2.58
Llanbister Road	Western	2.84
Llandanwg	Western	2.17
Llandecwyn	Western	2.72
Llandeilo	Western	2.76
Llandovery	Western	3.03
Llandrindod	Western	2.41
Llandybie	Western	3.19
Llanfairfechan*	London North Western	3.08
Llanfairpwll*	London North Western	2.96
Llangadog	Western	2.90
Llangammarch	Western	2.43
Llangennech	Western	3.20
Llangynllo	Western	3.12
Llanishen	Western	2.82
Llanrwst	London North Western	3.01
Llansamlet	Western	2.65
Llantwit Major	Western	1.81
Llanwrda	Western	2.84
Llanwrtyd	Western	2.40
Llwyngwril	Western	2.55
Llwynypia	Western	2.94
Loch Awe	Scotland	2.46
Loch Eil Outward Bound	Scotland	3.15
Lochailort	Scotland	2.51
Locheilside	Scotland	2.51
Lochgelly	Scotland	2.40
Lochluichart	Scotland	2.28

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Lochwinnoch	Scotland	2.86
Lockwood	London North Eastern	2.47
London Fields	Anglia	2.28
Long Preston	London North Western	2.01
Longbeck	London North Eastern	1.72
Longcross	Wessex	2.17
Longniddry	Scotland	2.34
Longport	London North Western	2.42
Longton	Midland & Continental	2.94
Looe	Western	2.72
Lostock Gralam	London North Western	3.33
Lostock Hall	London North Western	2.63
Lostwithiel	Western	2.90
Lowdham	Midland & Continental	2.31
Ludlow	Western	3.10
Lydney	Western	2.96
Lymington Pier	Wessex	2.02
Lytham	London North Western	2.81
Maesteg	Western	2.59
Maesteg (Ewenny Road)	Western	2.62
Maiden Newton	Wessex	2.20
Maidstone Barracks	Kent	2.04
Manchester United Halt	London North Western	2.64
Manea	Anglia	2.50
Manorbier	Western	3.13
Manors	London North Eastern	2.16
Mansfield	Midland & Continental	2.45
Mansfield Woodhouse	Midland & Continental	2.40
Market Rasen	London North Eastern	2.44
Marlow	Western	3.14
Marsden	London North Western	2.91
Marske	London North Eastern	2.53
Marton	London North Eastern	1.70
Maryhill	Scotland	2.28
Maryport	London North Western	3.46
Matlock	Midland & Continental	1.96
Maxwell Park	Scotland	2.13
Maybole	Scotland	2.31
Melksham	Western	3.04
Melton	Anglia	2.55
Menheniot	Western	3.24
Meols Cop	London North Western	2.83
Merryton	Scotland	1.73
Metheringham	London North Eastern	1.71
Metrocentre	London North Eastern	2.36
Micklefield	London North Eastern	2.03
Middlewood	London North Western	2.31
Midgham	Western	2.82
Milford Haven	Western	3.26
Mill Hill (Lancashire)	London North Western	2.34

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Millbrook (Bedfordshire)	London North Western	2.44
Millbrook (Hants)	Wessex	2.54
Milliken Park	Scotland	2.28
Millom	London North Western	2.38
Mills Hill	London North Western	2.53
Milnrow	London North Western	2.48
Minffordd	Western	2.48
Minster	Kent	2.26
Mirfield	London North Eastern	3.02
Mistley	Anglia	2.48
Mobberley	London North Western	3.11
Monifieth	Scotland	2.41
Monks Risborough	London North Western	3.05
Montpelier	Western	2.85
Moorthorpe	London North Eastern	2.92
Morar	Scotland	2.51
Morchard Road	Western	2.82
Morden South	Sussex	1.92
Morecambe	London North Western	2.93
Moreton (Dorset)	Wessex	2.62
Morfa Mawddach	Western	2.32
Morley	London North Eastern	2.49
Moses Gate	London North Western	3.02
Moss Side	London North Western	3.02
Mosspark	Scotland	2.58
Moston	London North Western	2.77
Mouldsworth	London North Western	3.23
Mount Vernon	Scotland	2.01
Mountain Ash	Western	2.71
Muir Of Ord	Scotland	2.10
Musselburgh	Scotland	2.37
Mytholmroyd	London North Eastern	3.14
Nafferton	London North Eastern	2.05
Nailsea & Backwell	Western	2.69
Nantwich	Western	2.65
Narberth	Western	3.20
Navigation Road	London North Western	3.13
Needham Market	Anglia	3.36
Nelson	London North Western	2.73
Neston	London North Western	3.20
Netherfield	Midland & Continental	3.13
Nethertown	London North Western	2.73
New Clee	London North Eastern	2.20
New Cumnock	Scotland	2.72
New Hey	London North Western	1.97
New Holland	London North Eastern	2.57
New Hythe	Kent	2.58
New Lane	London North Western	2.70
Newark Castle	London North Eastern	2.35
Newbury Racecourse	Western	2.67

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Newcraighall	Scotland	1.88
Newhaven Harbour	Sussex	2.95
Newhaven Marine	Sussex	3.50
Newmarket	Anglia	2.19
Newstead	Midland & Continental	2.29
Newton Aycliffe	London North Eastern	2.18
Newton St Cyres	Western	2.79
Newtonmore	Scotland	2.31
Newton-on-Ayr	Scotland	2.93
Nitshill	Scotland	2.10
Normanton	London North Eastern	2.00
North Berwick	Scotland	2.26
North Fambridge	Anglia	3.04
North Llanrwst	London North Western	2.98
North Queensferry	Scotland	2.49
North Road	London North Eastern	2.34
North Walsham	Anglia	3.64
Norton Bridge	London North Western	2.86
Nunthorpe	London North Eastern	2.23
Oakengates	London North Western	2.74
Ockley	Sussex	2.00
Oldfield Park	Western	2.73
Oldham Werneth	London North Western	2.03
Ore	Kent	2.71
Orrell	London North Western	2.92
Oulton Broad North	Anglia	3.62
Oulton Broad South	Anglia	3.52
Outwood	London North Eastern	2.28
Overpool	London North Western	2.68
Padgate	London North Western	2.82
Paisley Canal	Scotland	2.43
Pannal	London North Eastern	2.28
Pantyffynnon	Western	2.98
Park Street	London North Western	3.20
Parson Street	Western	2.79
Parton	London North Western	2.63
Patchway	Western	2.83
Patricroft	London North Western	3.02
Patterton	Scotland	1.96
Peartree	Midland & Continental	2.97
Pegswood	London North Eastern	2.43
Pemberton	London North Western	2.76
Pembrey & Burry Port	Western	3.23
Pembroke	Western	3.23
Pembroke Dock	Western	3.37
Penally	Western	3.39
Pencoed	Western	2.55
Penhelig	Western	2.37
Penistone	London North Eastern	2.51
Penkridge	London North Western	2.43

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Penmaenmawr	London North Western	2.41
Penmere	Western	2.83
Penrhiwceiber	Western	2.92
Penrhyndeudraeth	Western	2.11
Penryn	Western	3.14
Pensarn (Gwynedd)	Western	2.19
Penshurst	Kent	2.20
Pen-Y-Bont	Western	2.71
Penychain	Western	2.25
Penyffordd	London North Western	2.66
Perranwell	Western	3.15
Pershore	Western	2.31
Pevensey Bay	Sussex	2.71
Pilning	Western	3.05
Pinhoe	Western	3.13
Pleasington	London North Western	2.40
Plockton	Scotland	2.85
Plumley	London North Western	3.05
Polesworth	London North Western	2.88
Pollokshaws East	Scotland	2.34
Pollokshaws West	Scotland	2.00
Pollokshields West	Scotland	1.87
Pontarddulais	Western	2.61
Pontefract Baghill	London North Eastern	1.67
Pontefract Monkhill	London North Eastern	2.79
Pontefract Tanshelf	London North Eastern	2.93
Pontyclun	Western	2.65
Pont-y-Pant	London North Western	2.64
Pontypool & New Inn	Western	2.44
Poppleton	London North Eastern	2.06
Porthmadog	Western	2.53
Portlethen	Scotland	2.10
Portsmouth Arms	Western	2.65
Possilpark & Parkhouse	Scotland	2.43
Prees	Western	2.28
Prestbury	London North Western	2.84
Prestonpans	Scotland	2.38
Prestwick International Airport	Scotland	2.79
Priesthill & Darnley	Scotland	2.25
Prudhoe	London North Eastern	2.01
Pyle	Western	2.51
Queenstown Road (Battersea)	Wessex	3.69
Quintrell Downs	Western	3.07
Radcliffe (Nottinghamshire)	Midland & Continental	2.15
Radley	Western	2.01
Rainford	London North Western	2.81
Ramsgreave & Wilpshire	London North Western	2.23
Rannoch	Scotland	2.14
Rauceby	London North Eastern	2.68
Ravenglass for Eskdale	London North Western	2.17

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
Ravensthorpe	London North Eastern	3.47
Rawcliffe	London North Eastern	2.51
Reading West	Western	2.95
Redcar British Steel	London North Eastern	2.35
Redcar East	London North Eastern	1.86
Reddish South	London North Western	3.08
Redland	Western	2.68
Reedham (Norfolk)	Anglia	2.57
Renton	Scotland	2.72
Rhiwbina	Western	2.93
Rhoose – Cardiff International Airport	Western	1.79
Rhosneigr*	London North Western	3.04
Rhymney	Western	2.04
Ribblehead	London North Western	2.33
Ridgmont	London North Western	2.07
Riding Mill	London North Eastern	1.94
Rishton	London North Western	2.53
Roche	Western	2.99
Rogart	Scotland	2.19
Rolleston	Midland & Continental	2.39
Roman Bridge	London North Western	3.44
Rose Grove	London North Western	2.54
Rosyth	Scotland	2.47
Roughton Road	Anglia	3.36
Roy Bridge	Scotland	3.09
Ruabon	Western	3.31
Rufford	London North Western	2.48
Rugeley Town	London North Western	2.50
Rugeley Trent Valley	London North Western	2.52
Ruskington	London North Eastern	1.69
Ruswarp	London North Eastern	2.15
Ryde St. Johns Road	Wessex	2.13
Ryder Brow	London North Western	3.07
Salhouse	Anglia	2.42
Saltaire	London North Eastern	2.41
Saltash	Western	2.89
Saltburn	London North Eastern	1.96
Saltmarshe	London North Eastern	2.61
Salwick	London North Western	2.86
Sandal & Agbrigg	London North Eastern	1.76
Sandown	Wessex	2.23
Sandplace	Western	2.66
Sanquhar	Scotland	2.72
Sarn	Western	2.48
Saundersfoot	Western	3.10
Saunderton	London North Western	2.84
Saxilby	London North Eastern	2.16
Saxmundham	Anglia	2.69
Scotscalder	Scotland	2.74
Sea Mills	Western	2.77

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Seaham	London North Eastern	1.86
Seamer	London North Eastern	1.78
Seascale	London North Western	2.44
Seaton Carew	London North Eastern	2.31
Sellafield	London North Western	2.49
Selling	Kent	3.02
Severn Beach	Western	2.93
Shalford	Wessex	2.54
Shawford	Wessex	2.70
Shawlands	Scotland	2.11
Shepley	London North Eastern	2.47
Shepreth	Anglia	2.51
Sherburn in Elmet	London North Eastern	2.17
Sheringham	Anglia	2.65
Shieldmuir	Scotland	2.40
Shifnal	London North Western	3.04
Shildon	London North Eastern	1.82
Shippea Hill	Anglia	3.18
Shipton	Western	2.72
Shirebrook	London North Eastern	2.08
Shirehampton	Western	2.50
Shireoaks	London North Eastern	2.17
Shoreham (Kent)	Kent	2.71
Sileby	Midland & Continental	2.52
Silecroft	London North Western	2.67
Silkstone Common	London North Eastern	1.98
Silverdale	London North Western	3.01
Skewen	Western	2.77
Slaithwaite	London North Eastern	2.65
Slateford	Scotland	2.09
Sleights	London North Eastern	2.70
Smallbrook Junction	Wessex	2.93
Smithy Bridge	London North Western	2.57
Snaith	London North Eastern	2.54
Snodland	Kent	2.07
Snowdown	Kent	2.66
Somerleyton	Anglia	1.99
South Bank	London North Eastern	2.10
South Elmsall	London North Eastern	1.88
South Gyle	Scotland	2.67
South Merton	Sussex	2.43
South Milford	London North Eastern	1.91
South Ruislip	London North Western	2.61
South Tottenham	Anglia	2.03
South Wigston	Midland & Continental	2.93
Southminster	Anglia	2.87
Sowerby Bridge	London North Eastern	2.36
Spean Bridge	Scotland	2.59
Spondon	Midland & Continental	2.84
Spooner Row	Anglia	2.28

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Springfield	Scotland	2.32
Squires Gate	London North Western	2.42
St Albans Abbey	London North Western	2.83
St Andrews Road	Western	2.66
St Bees	London North Western	2.59
St Budeaux Ferry Road	Western	2.79
St Budeaux Victoria Road	Western	2.63
St Columb Road	Western	3.24
St Germans	Western	3.11
St Helier (Surrey)	Sussex	2.24
St Keyne	Western	2.68
Stallingborough	London North Eastern	1.93
Stanlow & Thornton	London North Western	2.87
Stapleton Road	Western	2.21
Starbeck	London North Eastern	1.85
Starcross	Western	2.62
Staveley (Cumbria)	London North Western	2.64
Steeton & Silsden	London North Eastern	1.98
Stepps	Scotland	2.39
Stevenston	Scotland	2.85
Stewartby	London North Western	2.38
Stewarton	Scotland	2.38
Stocksfield	London North Eastern	2.13
Stocksmoor	London North Eastern	3.21
Stockton	London North Eastern	2.86
Stone	London North Western	2.17
Strathcarron	Scotland	2.50
Streethouse	London North Eastern	2.02
Strines	London North Western	2.79
Stromeferry	Scotland	2.89
Styal	London North Western	2.23
Sudbury & Harrow Road	London North Western	3.19
Sudbury (Suffolk)	Anglia	3.08
Sudbury Hill Harrow	London North Western	2.95
Sugar Loaf	Western	2.47
Summerston	Scotland	2.12
Sunnymeads	Wessex	3.06
Sutton Parkway	Midland & Continental	2.42
Swale	Kent	2.65
Swinderby	London North Eastern	2.34
Swineshead	London North Eastern	2.23
Syon Lane	Wessex	2.87
Syston	Midland & Continental	2.23
Tackley	Western	2.49
Tain	Scotland	2.37
Talsarnau	Western	2.32
Talybont	Western	2.14
Taynuilt	Scotland	2.44
Tees-Side Airport	London North Eastern	2.14
Tenby	Western	3.12

Table A1.6: Station stewardship measure for category F (continued)		
Station name	***Operating route***	***SSM***
The Lakes (Warwickshire)	London North Western	2.67
Thornaby	London North Eastern	2.04
Thorne South	London North Eastern	2.18
Thornford	Wessex	3.24
Thornliebank	Scotland	2.57
Thornton Abbey	London North Eastern	2.64
Thorntonhall	Scotland	1.75
Thorpe Culvert	London North Eastern	2.08
Three Oaks	Kent	3.31
Thurgarton	Midland & Continental	2.31
Thurnscoe	London North Eastern	1.97
Thurston	Anglia	2.41
Tir-Phil	Western	2.06
Ton Pentre	Western	2.81
Tondu	Western	2.70
Tonfanau	Western	2.54
Tonypandy	Western	2.78
Topsham	Western	2.35
Torre	Western	2.74
Trafford Park	London North Western	3.19
Trehafod	Western	2.78
Treherbert	Western	3.08
Treorchy	Western	2.79
Trimley	Anglia	3.01
Tulloch	Scotland	2.51
Tutbury & Hatton	Midland & Continental	2.73
Ty Croes*	London North Western	3.16
Ty Glas	Western	1.92
Tygwyn	Western	2.38
Tyndrum Lower	Scotland	2.24
Tyndrum Upper	Scotland	2.62
Tywyn	Western	2.52
Ulceby	London North Eastern	2.56
Ulleskelf	London North Eastern	2.47
Umberleigh	Western	2.45
Uphall	Scotland	2.05
Upholland	London North Western	2.91
Upper Holloway	Anglia	2.20
Upton	London North Western	3.09
Upwey	Wessex	2.58
Uttoxeter	Midland & Continental	2.31
Valley	London North Western	3.31
Wainfleet	London North Eastern	2.16
Wakefield Kirkgate	London North Eastern	3.33
Wallyford	Scotland	2.36
Walsden	London North Western	2.63
Walthamstow Queens Road	Anglia	2.77
Wanborough	Wessex	2.16
Wandsworth Road	Kent	1.85
Wanstead Park	Anglia	3.57

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Wargrave	Western	2.77
Warminster	Western	2.33
Warnham	Sussex	2.02
Water Orton	London North Western	2.42
Wateringbury	Kent	2.72
Watford North	London North Western	2.95
Wavertree Technology Park	London North Western	2.86
Wedgwood	London North Western	2.34
Weeley	Anglia	2.51
Weeton	London North Eastern	2.66
Welshpool	Western	2.77
Wem	Western	2.21
Wembley Stadium	London North Western	2.37
Wennington	London North Western	2.13
West Brompton	Sussex	2.27
West Calder	Scotland	2.32
West Kilbride	Scotland	3.00
West Ruislip	London North Western	2.84
West Runton	Anglia	2.03
Westcliff	Anglia	2.16
Westenhanger	Kent	1.86
Wester Hailes	Scotland	2.44
Westerfield	Anglia	2.76
Westhoughton	London North Western	2.55
Weston Milton	Western	3.00
Wetheral	London North Eastern	2.11
Whalley	London North Western	2.27
Whatstandwell	Midland & Continental	2.31
Whifflet	Scotland	2.17
Whimple	Wessex	2.61
Whinhill	Scotland	2.09
Whitby	London North Eastern	2.72
Whitchurch (Cardiff)	Western	1.77
Whitchurch (Salop)	Western	2.72
White Notley	Anglia	2.78
Whitland	Western	3.11
Whitley Bridge	London North Eastern	2.15
Whitlock's End	London North Western	2.40
Whittlesea	Anglia	3.69
Whitwell	London North Eastern	1.93
Wickham Market	Anglia	2.77
Widdrington	London North Eastern	2.44
Wigton	London North Western	2.92
Wildmill	Western	2.68
Willington	Midland & Continental	2.41
Wilmcote	London North Western	3.51
Wilnecote	London North Western	2.47
Wimbledon Chase	Sussex	2.84
Winchelsea	Kent	2.00
Winsford	London North Western	2.81

Table A1.6: Station stewardship measure for category F (continued)

Station name	*Operating route*	*SSM*
Woburn Sands	London North Western	2.23
Wombwell	London North Eastern	1.98
Wood End	London North Western	3.10
Woodbridge	Anglia	2.12
Woodgrange Park	Anglia	1.93
Woodhouse	London North Eastern	2.48
Woodlesford	London North Eastern	2.08
Woodley	London North Western	2.39
Wootton Wawen	London North Western	2.80
Worle	Western	2.72
Worstead	Anglia	2.27
Wrabness	Anglia	3.14
Wrenbury	Western	2.21
Wressle	London North Eastern	2.44
Wrexham Central	London North Western	2.85
Wylam	London North Eastern	2.06
Wymondham	Anglia	3.36
Yalding	Kent	2.99
Yarm	London North Eastern	2.53
Yeoford	Western	2.66
Yetminster	Wessex	2.99
Ynyswen	Western	3.21
Yoker	Scotland	2.66
Yorton	Western	2.22
Ystrad Rhondda	Western	2.75

*Stations which have had improvement works completed as part of the National Stations Improvement Programme (NSIP). Although 29 stations have been completed as part of NSIP, two of these stations (Carmarthen and Middlesborough) do not yet have station stewardship measures and consequently are not included in this list.

Appendix 2 – Depot stewardship measure – list of depots

The following table provides a list of all depots and their rolling average stewardship measures for each year. The grading system is from 1 – 5 with the lower the number the better. The measure is an average score from 11 elements, such as wheel lathes, structure, etc. These elements are individually rated 1-5 where 1 = 'as installed' and 5 = 'no longer serviceable'.

Table A2.1: Depot stewardship measure – list of depots*

Location (also includes depot code)	*Operating Route*	*Average 2001/06*	*Average 2001/07*	*Average 2001/08*	*Average 2001/09*	*Average 2001/10*
Cambridge (CAM)	Anglia	2.37	2.37	2.77	2.77	2.77
Clacton (CLA)	Anglia		3.83	3.83	3.83	3.85
Colchester (COL)	Anglia	2.82	2.82	2.97	2.97	2.97
London Chingford (CHI)	Anglia	2.79	2.79	2.79	2.79	2.79
London East Ham (EAH)	Anglia	3.60	3.56	2.72	2.72	2.72
London Ilford (ILF)	Anglia	3.54	3.54	2.46	2.46	2.46
Norwich Crown Point (NCP)	Anglia	3.10	2.43	2.43	2.43	2.63
Shoeburyness (SHO)	Anglia	2.74	2.74	2.74	2.74	2.74
Southend (SOU)	Anglia		2.72	2.72	2.72	2.39
Gillingham (GIL)	Kent		2.69	2.69	2.69	2.51
London Grove Park (GRP)	Kent	2.21	2.21	2.21	2.21	2.21
London Orpington (ORP)	Kent		2.14	2.14	2.14	2.47
London Slade Green (SLG)	Kent	2.13	2.13	2.13	2.13	2.13
St. Leonard's (SLE)	Kent	1.72	1.72	2.64	2.64	2.64
Hull Botanic Gardens (HBG)	London North East	2.44	2.44	2.83	2.83	2.83
Leeds Neville Hill – MML (LNM)	London North East	3.28	3.28	2.59	2.59	2.59
Leeds Neville Hill – RNE (LNR)	London North East	3.33	3.33	2.51	2.51	2.51
Letchworth (LET)	London North East	1.70	2.52	2.52	2.52	2.42
London Bound's Green (BOG)	London North East		1.87	1.87	1.87	1.87
London Ferme Park (FEP)	London North East		2.83	2.83	2.83	2.83
London Hornsey (HOR)	London North East	2.70	3.02	3.02	3.02	2.60
Newcastle Upon Tyne Heaton (NEH)	London North East		2.31	2.31	2.31	2.31
Sheffield (SHE)	London North East		2.94	2.94	2.94	2.94
Skipton (SKI)	London North East	1.35	1.35	2.49	2.49	2.49
Welwyn Garden City (WGC)	London North East		2.80	2.80	2.80	2.57
Aylesbury (AYL)	London North West	1.49	2.02	2.02	2.02	2.02
Barrow- in – Furness (BIF)	London North West	3.70	3.70	2.41	2.41	2.41
Birkenhead North (BKN)	London North West	2.63	2.63	2.84	2.84	2.84
Birmingham Soho (BIS)	London North West	1.94	1.94	2.21	2.21	2.21
Birmingham Tyseley (BIT)	London North West	2.73	2.73	2.58	2.58	2.58
Blackpool North (BLN)	London North West	2.20	2.20	2.37	2.37	2.37
Bletchley (BLE)	London North West	2.43	2.43	2.43	2.43	2.47
Holyhead (HOL)	London North West	2.65	2.65	2.68	2.68	2.68
Liverpool Kirkdale (LKD)	London North West		1.71	1.71	1.71	1.71
London Camden Primrose Hill (CAP)	London North West		2.52	2.52	2.52	2.31
London Wembley Central (WEC)	London North West	2.20	2.20	2.20	2.20	2.20
Manchester Newton Heath (MNH)	London North West	3.60	3.04	3.04	3.04	2.22
Watford Junction (WAJ)	London North West		3.00	3.00	3.00	2.58
Wolverhampton Oxley (WOO)	London North West		2.08	2.08	2.08	2.08

Table A2.1: Depot stewardship measure – list of depots* (continued)

Location (also includes depot code)	*Operating Route*	*Average 2001/06*	*Average 2001/07*	*Average 2001/08*	*Average 2001/09*	*Average 2001/10*
Bedford Midland (BEM)	Midland & Continental	3.08	3.08	3.08	3.08	3.08
Derby Etche's Park (DEP)	Midland & Continental	3.10	2.45	2.45	2.45	2.19
Nottingham, Eastcroft (NOE)	Midland & Continental	2.16	2.16	2.08	2.08	2.08
Aberdeen Clayhills (ABC)	Scotland	2.50	2.50	2.23	2.23	2.23
Ayr- Townhead (AYR)	Scotland		2.30	2.36	2.36	2.60
Edinburgh Craigentinny/ Portobello (EDC)	Scotland	2.94	2.94	2.63	2.63	2.63
Edinburgh Haymarket (EDH)	Scotland	2.40	2.73	2.73	2.73	2.59
Glasgow Cokerhill (GLC)	Scotland		2.56	2.56	2.56	2.61
Glasgow Shields (GLS)	Scotland	2.56	2.56	2.81	2.81	2.81
Glasgow Yoker (GLY)	Scotland	1.98	1.98	2.35	2.35	2.35
Inverness (INV)	Scotland	2.70	2.70	2.23	2.23	2.23
Perth (PER)	Scotland		3.19	3.19	3.19	3.77
London Victoria (VIC)	Sussex	4.18	2.31	2.31	2.31	2.62
Barton Mills	Wessex			2.03	2.03	2.27
Bournemouth West (BOW)	Wessex	2.46	2.46	2.46	2.46	2.46
Farnham	Wessex			1.94	1.94	2.01
Fratton (FRA)	Wessex		2.57	2.57	2.57	2.54
London Clapham Junction (CLJ)	Wessex		2.53	2.53	2.53	2.29
London Stewart's Lane (STL)	Wessex	2.44	2.44	2.44	2.44	2.44
London Strawberry Hill (STH)	Wessex		2.83	2.83	2.83	2.52
London Wimbledon (WIM)	Wessex	2.32	2.32	2.32	2.32	2.32
Ryde	Wessex	2.69	2.69	2.69	2.69	2.69
Salisbury (SAL)	Wessex	2.02	2.02	1.95	1.95	1.95
Bristol St. Phillips Marsh (BSP)	Western	2.15	2.15	2.15	2.15	2.23
Cardiff Canton (CAC)	Western	2.34	2.34	2.97	2.97	2.97
Exeter St. David's (ESD)	Western	2.01	2.01	2.54	2.54	2.54
London Kensal Green (KEG)	Western	3.11	3.11	3.11	3.11	2.26
London Old Oak Common (OOC)	Western	1.88	1.88	1.88	1.88	2.12
Machynlleth (MAC)	Western			1.98	1.98	1.98
Penzance Long Rock (PEN)	Western	2.41	2.41	2.41	2.41	2.41
Plymouth Laira (PLY)	Western	2.37	2.37	2.85	2.85	2.85
Reading (REA)	Western	2.30	2.30	2.30	2.30	2.30
Shrewsbury Abbey Foregate (SAF)	Western		3.22	3.22	3.22	3.22
Swansea High Street (SWH)	Western	2.36	2.36	2.36	2.36	2.79
Swansea Landore (SWL)	Western	2.97	2.97	2.97	2.97	2.33
Worcester Shrub Hill (WSH)	Western	2.05	2.05	1.93	1.93	1.93

* Depots which are leased to the Depot Facility Owner on a 'Full Repairing' basis and, therefore, for which Network Rail has no responsibility for the maintenance and repair of the elements within them have been omitted from this year's return measures and list.

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