Network Rail Monitor

Quarter 4 of Year 5 of CP4 | 5 January 2014 - 31 March 2014

ORR
OFFICE OF **RAIL REGULATION**

Overview

This monitor provides ORR's assessment of Network Rail's performance during 2013-14, the fifth and final year of Control Period 4 (CP4). It also offers a commentary on the company's performance over the whole of CP4. For ease of reference the annex lists the targets Network Rail was funded to deliver in CP4 and provides a summary update on the status of each one.

Network Rail performed well in many areas in 2013-14 against a backdrop of ever higher demand, with the number of passenger journeys up by 5.7% and freight moved by 5.8% compared with the previous year. For the whole of CP4 the figures were 25.5% and 10.1% respectively. The company was successful in delivering a major programme of enhancements, working on over 300 projects at 1,300 worksites and achieving key milestones over the Christmas and New Year period. This was in the face of some exceptionally challenging weather conditions which required the industry as a whole to pull together to ensure the safety of passengers and staff while continuing to run services as normally as possible.

We have taken account of the exceptional weather conditions Network Rail faced during parts of the year. But even so the company did not achieve the performance targets it was funded to deliver at the end of CP4 and as a result we have determined that it did not do everything reasonably practicable to deliver on the obligations in its network licence and therefore breached that licence. Consequently we have put in place a package of balanced enforcement measures.

A safe railway

Network Rail has played a key role in improving safety achieving its CP4 regulated target. It has closed more than 800 level crossings over the past five years, improved ways of working and equipment to reduce risks for rail workers, and campaigned to highlight the risks the railways can pose to the public. ORR does continue to identify areas for improvement. For example, the company, working with contractors and the rest of the industry, can work more proactively to manage safety risks, and there is evidence of increasing slips, trips and falls at stations.

ORR's full view of health and safety on Britain's railways, including detailed analysis on Network Rail's performance, will be published later in July 2014.

Passenger train performance

Nearly all of Network Rail's CP4 regulated performance targets were missed, with only the regional sector target for cancellations and significant lateness (CaSL) being achieved. Long distance performance at the end of CP4 was 5.1pp behind target and for the London and South East (LSE) sector it was 3.4pp behind. To put this in context, this means that around 28,000 more long distance train services were either cancelled or more than 10 minutes late in 2013-14 than would have been the case had Network Rail achieved its target. For the LSE sector the figure is around 135 000 trains.

As a result we have determined that Network Rail breached its network licence. In the long distance sector we have already made an order determining that the company would return £1.5 million to funders for every 0.1pp by which it fell short of its performance target at the end of CP4. We adjusted the figure to take account of factors which we considered were either wholly or partly beyond Network Rail's reasonable control, for example extreme weather, and external factors such as suicides and cable thefts. The final sum is £53.1 million.

In the LSE sector we also determined that Network Rail had breached its licence. But in this case the company offered to invest £20 million to £25 million, in addition to its commitments for the current control period, to improve the resilience of the network. As this will be of direct benefit to rail users in the sector we have advised Network Rail that an additional investment of £25 million would be acceptable and therefore we are not proposing to levy a penalty.

We concluded that despite missing a key performance target in the regional sector, Network Rail did not breach its licence. We concluded that operator-caused delays were a significant contributory factor and without these there would have been a reasonable prospect of the company achieving the target (pages 5-13).

Freight train performance

Network Rail's performance for its freight customers did not meet the target. At the end of CP4 the relevant measure showed 3.70 Network Rail delay minutes per 100 train kilometres – 25.9% worse than target. However, having consulted the industry Freight Joint Board we noted that the new freight delivery metric was ahead of target at the beginning of the new control period reflecting a renewed focus

on performance, and we concluded that further regulatory action was not appropriate (pages 14-15).

Asset management

Network Rail has improved its capability and asset management systems over the course of CP4. The company achieved PAS55 certification (denoting that it had reached a good practice standard) in May 2013. It continued to make good progress towards the achievement of asset management excellence as assessed under the asset management excellence model (AMEM) although at the end of CP4 it was just short of the overall target set for the control period.

The weather conditions over the winter of 2013-14 were particularly challenging with incidences of flooding and numerous asset failures, notably the Dawlish coastal defence wall in Devon. Network Rail's reactive work to repair the assets, including failed earthworks at approximately 140 locations, has been highly commendable. Front line teams worked long hours in difficult conditions to reopen the railway. For the future it is important to ensure the lessons are learnt from these asset failures.

Renewals volumes for plain line track were 7% down on the levels planned for the whole of CP4, but we are satisfied that this will not adversely affect the long term sustainability of the network, provided Network Rail delivers the volume of renewal work planned for CP5 (pages 17-21).

Developing the network

Network Rail has been largely successful in delivering the major portfolio of enhancements during CP4. It was required to deliver 118 regulated output milestones in CP4 and 98 of these were delivered early or on time. These have brought a range of benefits to passengers and freight customers including for example, higher frequency and more reliable services, longer trains, improved stations and new routes for freight operations.

Of the 20 milestones that were late, only one, the journey time improvements between Sheffield and St Pancras, had a notable impact on Network Rail's customers. The company is working to complete the necessary work so that the new timetable can operate reliably and our view is that it is not proportionate to consider formal enforcement action (pages 23-24).

Disruption from planned engineering work

We have set targets for Network Rail to keep levels of disruption to passengers and freight trains from planned engineering work within acceptable parameters. Network Rail achieved the CP4 target for freight customers, but the target for passengers was not achieved. However, we recognise that to an extent this was due to significant volumes of engineering works carried out in the last quarter of 2013-14, much of it in response to the adverse weather over the winter. Furthermore, the level of disruption to passengers has been kept low – and below the target - for most of CP4. On that basis we concluded that regulatory action was not appropriate (page 15).

Customer satisfaction

Although not a regulated target, we note that train operators' overall satisfaction with Network Rail declined by 8 percentage points (pp) during the year (from 66% to 58% satisfied), dissatisfaction with train service performance being a significant cause. We need to see evidence that the network is becoming more resilient to climate change so that disruption to passengers and freight customers from severe weather can be kept to a minimum (page 16).

Efficiency and expenditure

We are currently in the process of reviewing Network Rail's efficiency, expenditure and financial performance in CP4 and will report on our assessment in our annual efficiency and finance assessment in the autumn (page 25).
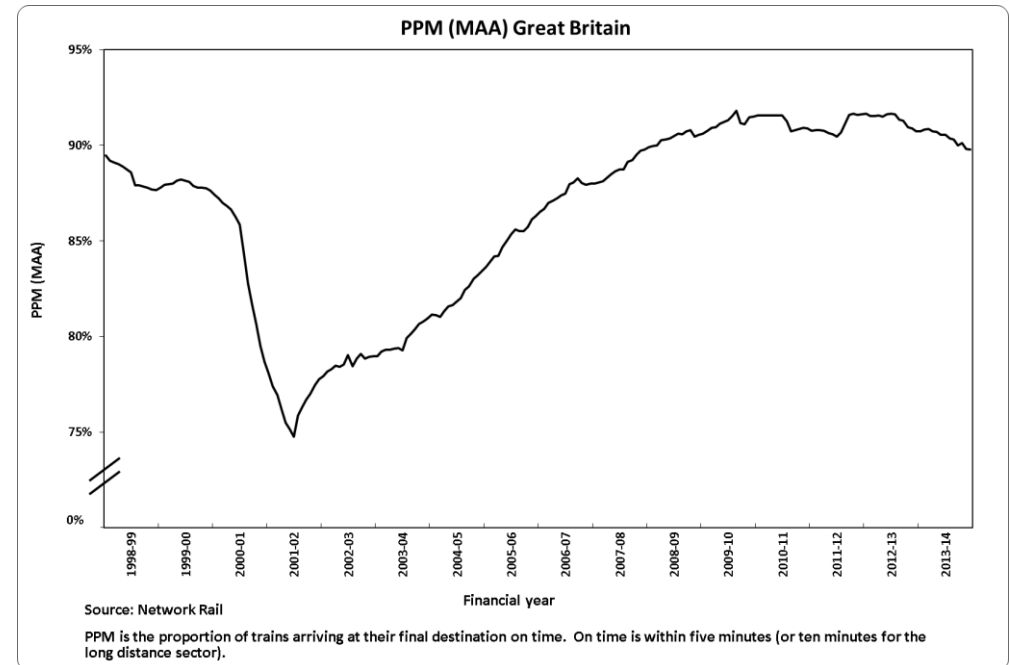
Network Rail's internal accounts for 2013-14 show that the company is behind the efficiency target agreed with us for the end of CP4.

In this end-of-year *Network Rail Monitor*, we focus mainly on England and Wales. We publish a separate edition covering issues particular to Scotland (available at: orr.gov.uk/publications/reports/network-rail-monitor).
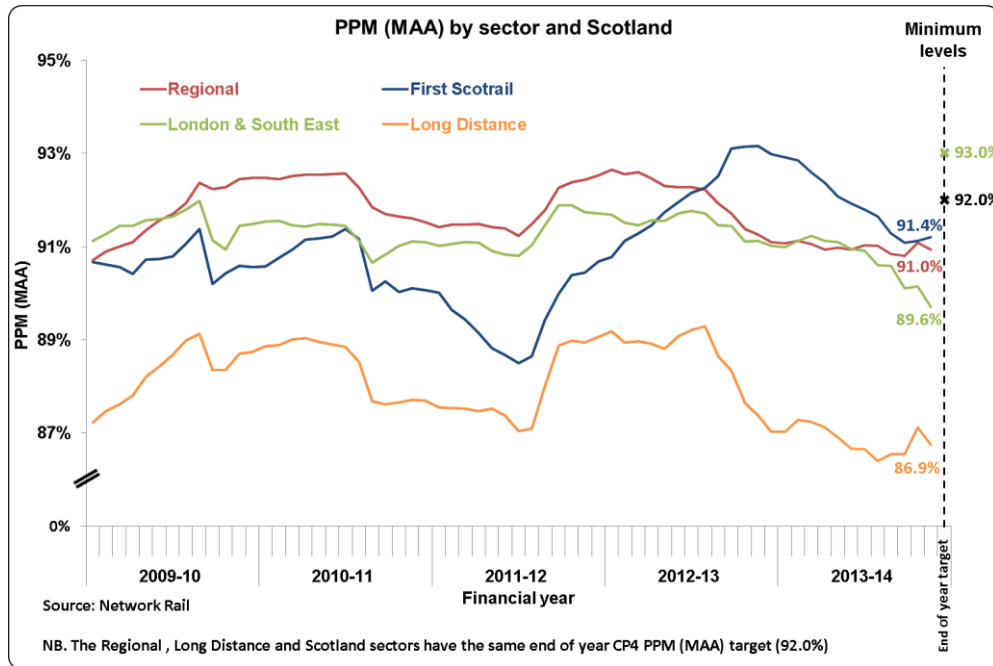
Train service performance

We have been monitoring Network Rail's performance closely over Quarter 4 of 2013-14 (Q4). The company missed nearly all of its end of Control Period 4 (CP4) regulated performance targets, with only the regional sector target for cancellations and significant lateness (CaSL) being achieved.

The beginning of CP4 saw strong levels of performance, with public performance measure (PPM) levels initially better than target. A series of extreme weather events contributed to a worsening trend in performance in the last two years of the control period. In particular, 2013-14 saw a long and difficult autumn season combined with wet and windy weather which lasted until mid-February. Asset performance and operational management issues also contributed to the downward trend and at the end of CP4, punctuality as measured by the PPM in England and Wales was 89.8%, which is 2.8 percentage points (pp) below the expected CP4 outturn. We have therefore put in place a package of enforcement measures.

PPM (MAA) Great Britain

Source: Network Rail

PPM is the proportion of trains arriving at their final destination on time. On time is within five minutes (or ten minutes for the long distance sector).

In this section performance is measured on a moving annual average (MAA) basis, unless stated otherwise. The MAA is the average of the last 13 four-week periods.

PPM (MAA) by sector and Scotland

Source: Network Rail

NB. The Regional , Long Distance and Scotland sectors have the same end of year CP4 PPM (MAA) target (92.0%)

Sector performance

Long distance

Looking at CP4 as a whole, performance in the long distance sector in England and Wales started well then dropped sharply, in part due to a severe winter in 2009-10. It recovered to some extent in 2011-12, but fell back again in 2012-13 and 2013-14. At the end of the control period (31 March 2014) long distance PPM MAA was 86.9%, 5.1pp below the regulated target and 0.1pp below what it was in March 2013. To put this in context, this means some 28,000 more long distance train services (out of around 548,000 planned) were either cancelled or more than 10 minutes late than would have been the case had Network Rail achieved its target. Cancellations and significant lateness

(CaSL) at the end of the CP4 was 4.9%, 1.0pp worse than the regulated target.

Each year Network Rail agrees Joint Performance Improvement Plans (JPIPs) with each train operating company. These plans specify targets for PPM, CaSL and delay minutes.

PPM MAA for East Coast finished CP4 2.8pp behind the JPIP target, although 0.3pp better than achieved at this point last year. Network Rail delay affecting East Coast was 7.2pp below JPIP target. This is largely due to the significant number of track asset failures, particularly track faults, impacting performance.

Network Rail's performance for Virgin Trains saw a return to more stable levels at the end of CP4. PPM MAA recovered slightly over the last two quarters to reach 85.8%. Although this was the highest level seen in 2013-14 and 2.2pp above the level last year, the figure was still 0.8pp below JPIP target. Network Rail delay affecting Virgin Trains exited the control period 16.5pp below JPIP target largely due to external factors.

PPM MAA for CrossCountry at the end of CP4 was 3.6pp behind the JPIP target and 0.1pp behind that achieved at this point last year. CaSL MAA was 5.2%, 0.9pp below the JPIP target. Network Rail delay affecting Cross Country was substantially adrift, 20.2pp below the agreed JPIP target.

Over 2013-14, Network Rail delay affecting all First Great Western services (FGW) was behind the JPIP target or baseline in every category other than 'external' (e.g. trespass and animals on or near the line). At the end of the quarter, FGW's long distance services showed a PPM MAA of 81.8% having been affected by a wide range of issues, particularly
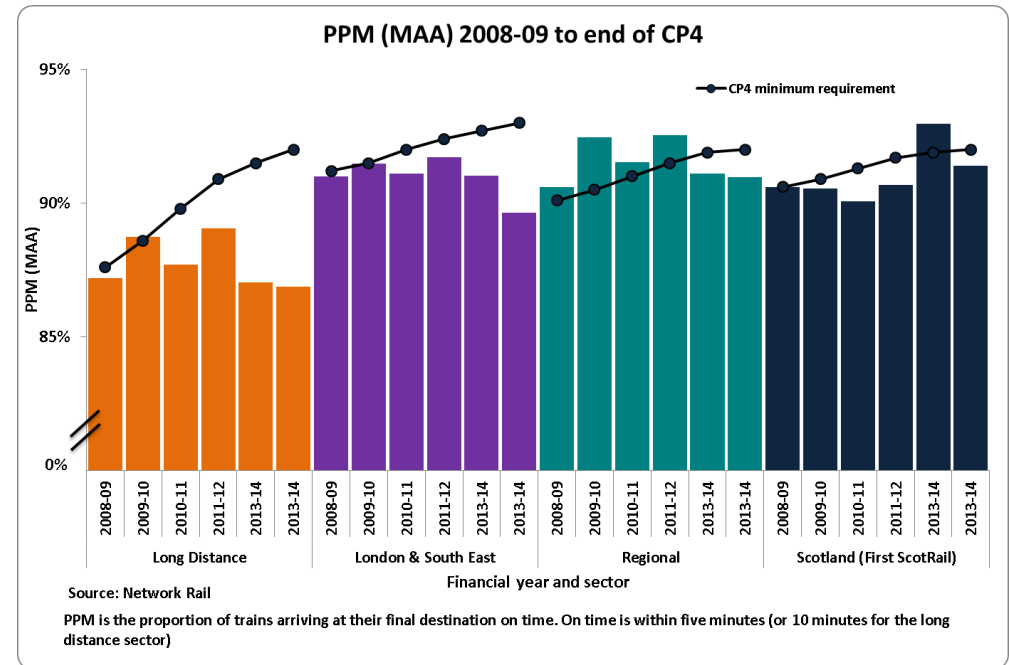
flooding in the Maidenhead area.

Performance in the long distance sector in England and Wales finished the year at 86.9% PPM, 5.1pp behind the regulatory target for the year.

CaSL finished 1.0pp worse than target, meaning 4.9% of train services in the long distance sector were either cancelled or at least 30 minutes late at destination.

Initiatives proposed in the Long Distance Recovery Plan, as required by our 2012 enforcement order, did not close the performance gap sufficiently to return to the CP4 end regulated performance targets. Our investigation has concluded that even with adjustments for extreme weather and external events that were to some extent beyond Network Rail's reasonable control, the Long Distance sector would have missed its regulated performance targets for 2013-14.

In July 2012 ORR's Board issued an order that a reasonable sum of £1.5 million would be returned to funders at the end of CP4 for every 0.1 percentage point below the sector regulated target that Network Rail achieved. We have reviewed the available evidence and concluded that Network Rail did not do everything reasonably practicable to achieve the 2013-14 PPM target in the Long Distance sector, and determined that a reasonable sum of £76.8 million would apply. We adjusted the figure to take account of factors which were beyond Network Rail's reasonable control including extreme weather, and external factors such as suicides and cable theft. The final sum is £53.1 million.

PPM (MAA) 2008-09 to end of CP4

Source: Network Rail

PPM is the proportion of trains arriving at their final destination on time. On time is within five minutes (or 10 minutes for the long distance sector)

London and South East (LSE)

PPM in the London and South East (LSE) sector has been below the regulated target for much of CP4. Although performance recovered slightly in 2011-12, it fell back again in the last two years of the control period. The LSE sector PPM MAA was 89.6% at the end of Q4 which is 3.4pp below the CP4 regulated target and 1.4pp less than at the same point in 2012-13. To put this in context, this means some 135,000 more London and South East train services (out of approximately 4,033,500 planned) were either cancelled or more than five minutes late than would have been the case had Network Rail achieved its target. CaSL MAA at the end of Q4 was 3.1% which is 1.1pp worse than the regulated target and 0.6pp behind the figure achieved at this stage last year. Whilst regulated performance outputs have been missed, this is the only sector in which an operator has achieved its JPIP PPM MAA target, with Chiltern Railways finishing the Control Period 0.9pp above target.

PPM MAA for First Capital Connect (FCC) at the end of CP4 was 4.6pp behind the JPIP target and 2.3pp behind that achieved at this point last year. Network Rail delay category groups were all behind baseline with the exception of non-track assets (points failures, track circuit failures etc.).

External delays and weather, along with network management issues (e.g. timetable planning and engineering work) continued to impact the performance of Southern Railway. PPM MAA at the end of CP4 was 85.8% - 3.7pp below the JPIP target and 2.2pp behind the figure achieved last year.

Performance on services operated by Southeastern was also behind the JPIP PPM MAA target – 3.8pp short in this case.
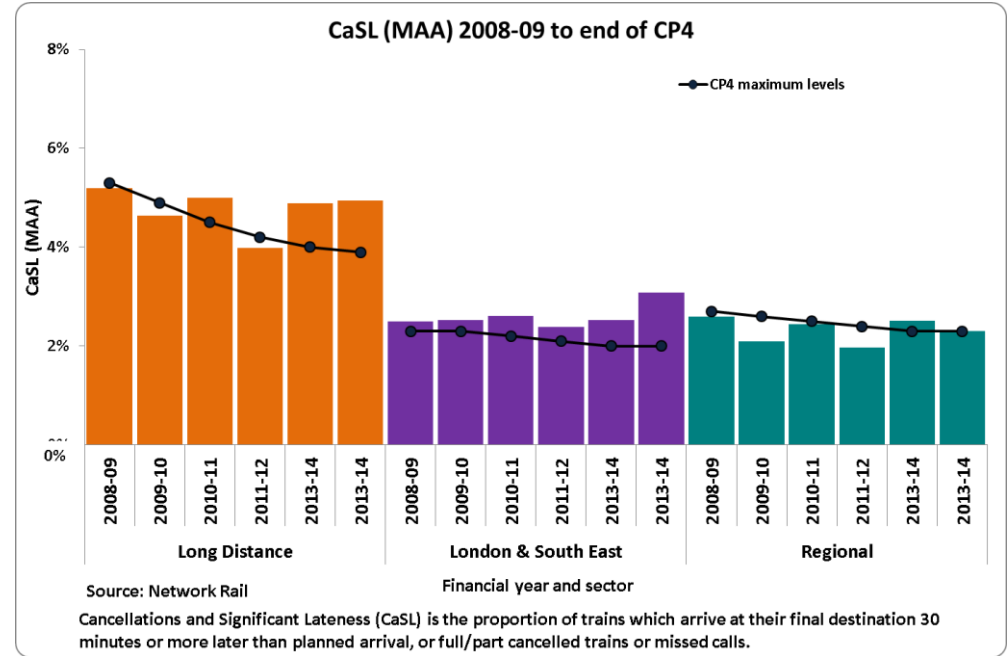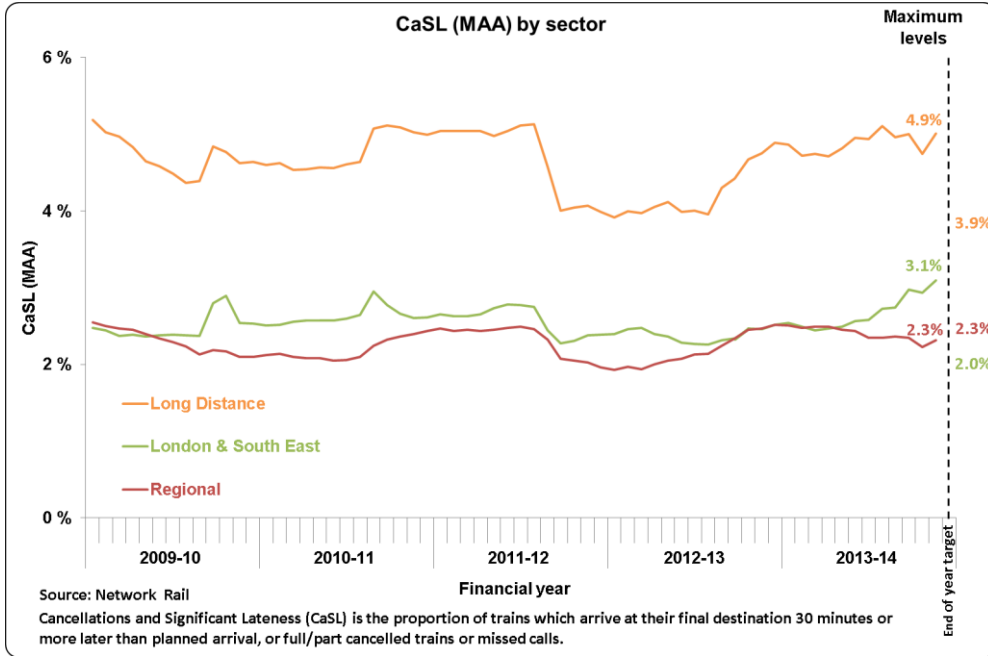
Weather delays were up 39.6% on last year, but delays associated with temporary speed restrictions (TSRs) were also substantially greater than baseline. This is a significant factor in the Track Assets Group which is 28.5% greater than last year.

PPM MAA for Abellio Greater Anglia was 91.7%, 0.1pp below the JPIP target and 0.5pp worse than the level achieved at the same point last year. This is largely due to delays attributed to severe weather, autumn and structures.

Initiatives proposed in the LSE Recovery Plan did not close the performance gap sufficiently to return to the CP4 end regulated performance targets. Our investigation into performance in the LSE Sector has concluded that Network Rail would not have achieved its PPM regulated target even if adjustments are made for TOC on Self delays, external events and extreme weather.

ORR's Board has reviewed the available evidence and concluded that Network Rail did not do everything reasonably practicable to achieve the 2013-14 PPM target in the LSE sector and had therefore breached its licence. We have taken the decision not to impose a penalty because the company has committed to deliver an LSE resilience fund plan of at least £25 million. We will hold Network Rail to account for its delivery of this plan and we expect Network Rail to work closely and constructively with ORR, DfT and others in the course of its development and implementation.

CaSL (MAA) by sector

6 %
4 %
2 %
0 %

CaSL (MAA)

Maximum levels

4.9%
3.9%
3.1%
2.3% 2.3%
2.0%

— Long Distance
— London & South East
— Regional

2009-10   2010-11   2011-12   2012-13   2013-14

Financial year

End of year target

Source: Network Rail

Cancellations and Significant Lateness (CaSL) is the proportion of trains which arrive at their final destination 30 minutes or more later than planned arrival, or full/part cancelled trains or missed calls.

CaSL (MAA) 2008-09 to end of CP4

8%
6%
4%
2%
0%

CaSL (MAA)

— CP4 maximum levels

Long Distance | **London & South East** | **Regional**
2008-09 2009-10 2010-11 2011-12 2013-14 2013-14

Financial year and sector

Source: Network Rail

Cancellations and Significant Lateness (CaSL) is the proportion of trains which arrive at their final destination 30 minutes or more later than planned arrival, or full/part cancelled trains or missed calls.

Regional sector

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Over the course of the CP4, performance in the regional sector has been variable. The first three years of the control period were strong, with punctuality above the regulated target. Performance declined in 2012-13, largely due to extreme weather conditions and the performance of some train operating companies. The regional sector PPM MAA was 91.0% at the end of CP4 which is 1.0pp below the regulated target and 0.1pp less that the same point in 2012-13. CaSL at the end of P13 was 2.3% which met the end of CP4 regulated target. Train crew resourcing problems were a significant cause of delay in the regional sector during the year and TOC on Self delays were a bigger issue than for other sectors.

External delays continue to impact the performance of Northern. PPM MAA at the end of CP4 was 91.0% - 0.6pp below the JPIP target although 0.3pp better than the figure achieved last year. CaSL MAA ended the control period on target at 1.8%.

Performance on services operated by London Midland was also behind target – 3.9pp below the JPIP PPM target. Delays associated with external factors were 27.1% higher than the same point last year. This has contributed to an increase in the total Network Rail delay categories which is 33.1% higher than the agreed JPIP target.
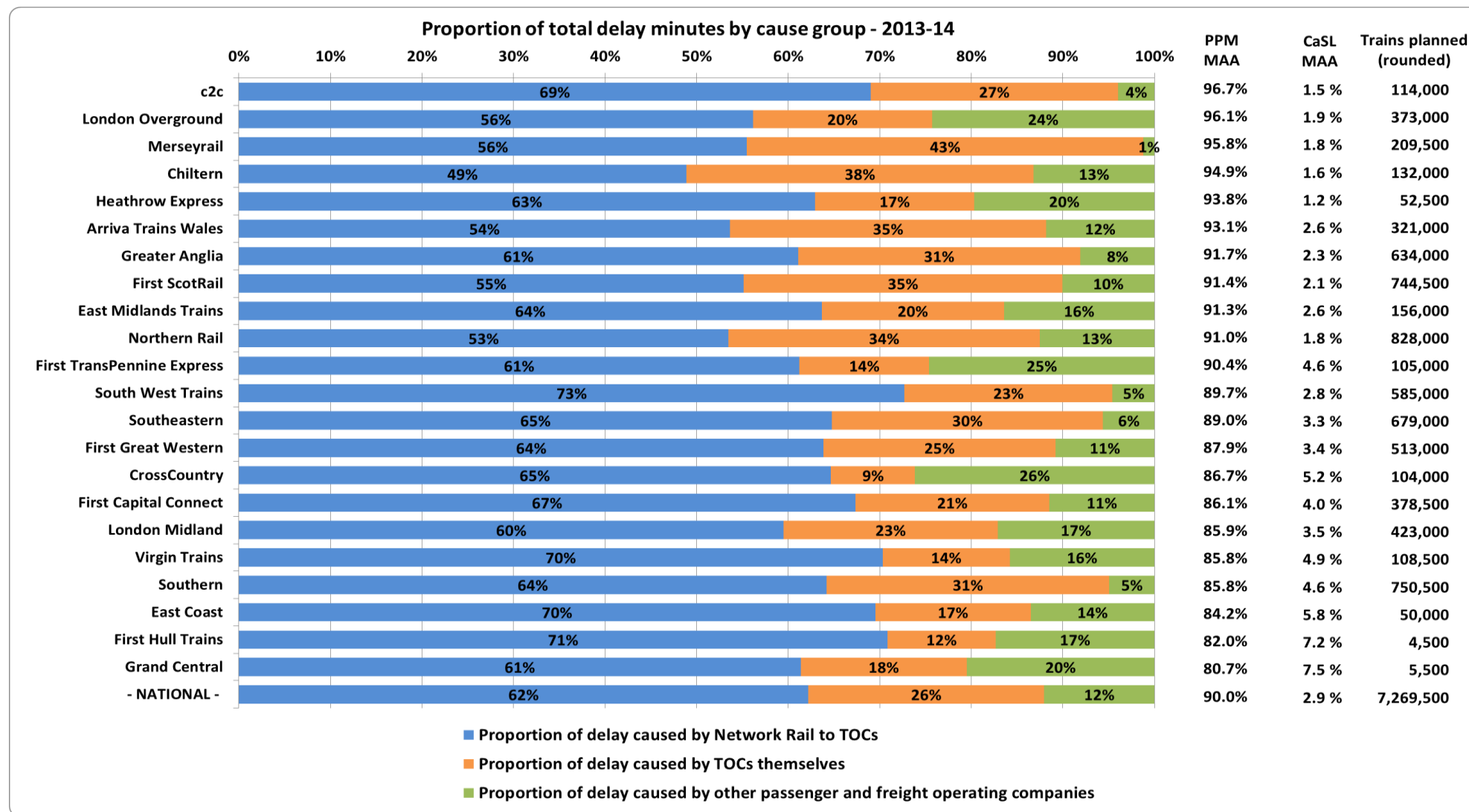
PPM MAA for Arriva Train Wales at the end of the control period was 1.0pp behind the JPIP target at 93.1%. Delays associated with network management were 30.0% higher than the same point this year. This has contributed to an increase in the total Network Rail delay categories, which is 14.0% higher than the target agreed in the JPIP.

At the same point FGW's regional services showed a PPM MAA of 89.2%, 3.0 pp below JPIP target.

Our investigation has concluded that Network Rail would have achieved its regulated PPM target for 2013-14 if an adjustment is made for TOC on Self delays. ORR's Board has therefore concluded that no further regulatory action is necessary for this sector.

To complete the picture, the chart below summarises individual train operators' end of year PPM and CaSL positions, together with the number of trains each operator expected to run. We also show how industry delay was apportioned for each operator and nationally overall. The causes of delay are discussed in the next section.

Proportion of total delay minutes by cause group - 2013-14

Operator	NR to TOCs	TOCs themselves	Other	PPM MAA	CaSL MAA	Trains planned (rounded)
c2c	69%	27%	4%	96.7%	1.5 %	114,000
London Overground	56%	20%	24%	96.1%	1.9 %	373,000
Merseyrail	56%	43%	1%	95.8%	1.8 %	209,500
Chiltern	49%	38%	13%	94.9%	1.6 %	132,000
Heathrow Express	63%	17%	20%	93.8%	1.2 %	52,500
Arriva Trains Wales	54%	35%	12%	93.1%	2.6 %	321,000
Greater Anglia	61%	31%	8%	91.7%	2.3 %	634,000
First ScotRail	55%	35%	10%	91.4%	2.1 %	744,500
East Midlands Trains	64%	20%	16%	91.3%	2.6 %	156,000
Northern Rail	53%	34%	13%	91.0%	1.8 %	828,000
First TransPennine Express	61%	14%	25%	90.4%	4.6 %	105,000
South West Trains	73%	23%	5%	89.7%	2.8 %	585,000
Southeastern	65%	30%	6%	89.0%	3.3 %	679,000
First Great Western	64%	25%	11%	87.9%	3.4 %	513,000
CrossCountry	65%	9%	26%	86.7%	5.2 %	104,000
First Capital Connect	67%	21%	11%	86.1%	4.0 %	378,500
London Midland	60%	23%	17%	85.9%	3.5 %	423,000
Virgin Trains	70%	14%	16%	85.8%	4.9 %	108,500
Southern	64%	31%	5%	85.8%	4.6 %	750,500
East Coast	70%	17%	14%	84.2%	5.8 %	50,000
First Hull Trains	71%	12%	17%	82.0%	7.2 %	4,500
Grand Central	61%	18%	20%	80.7%	7.5 %	5,500
- NATIONAL -	62%	26%	12%	90.0%	2.9 %	7,269,500

■ Proportion of delay caused by Network Rail to TOCs

■ Proportion of delay caused by TOCs themselves

■ Proportion of delay caused by other passenger and freight operating companies
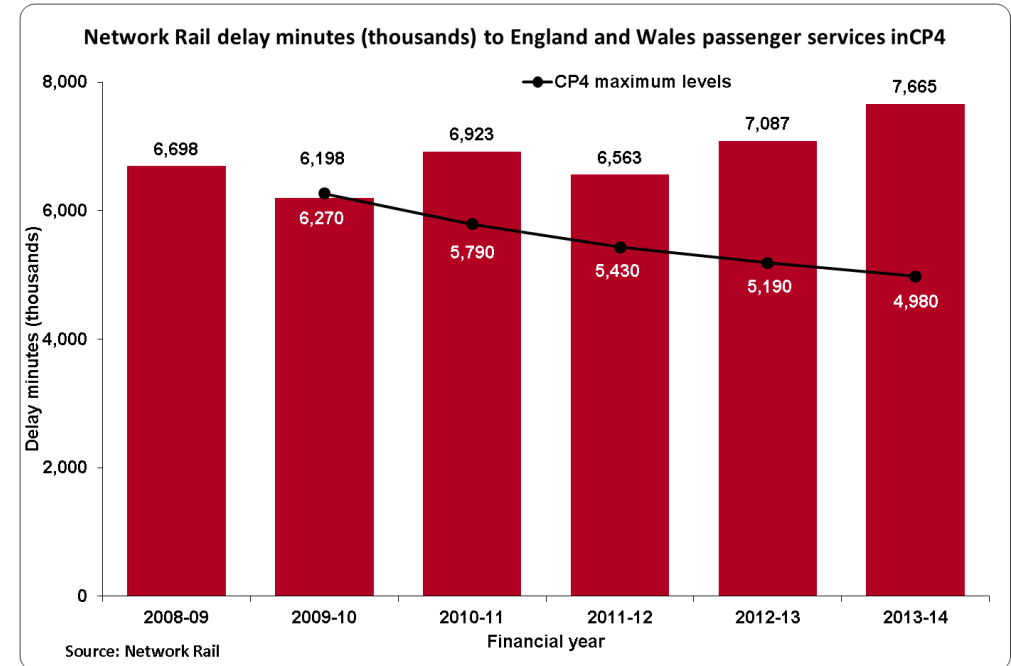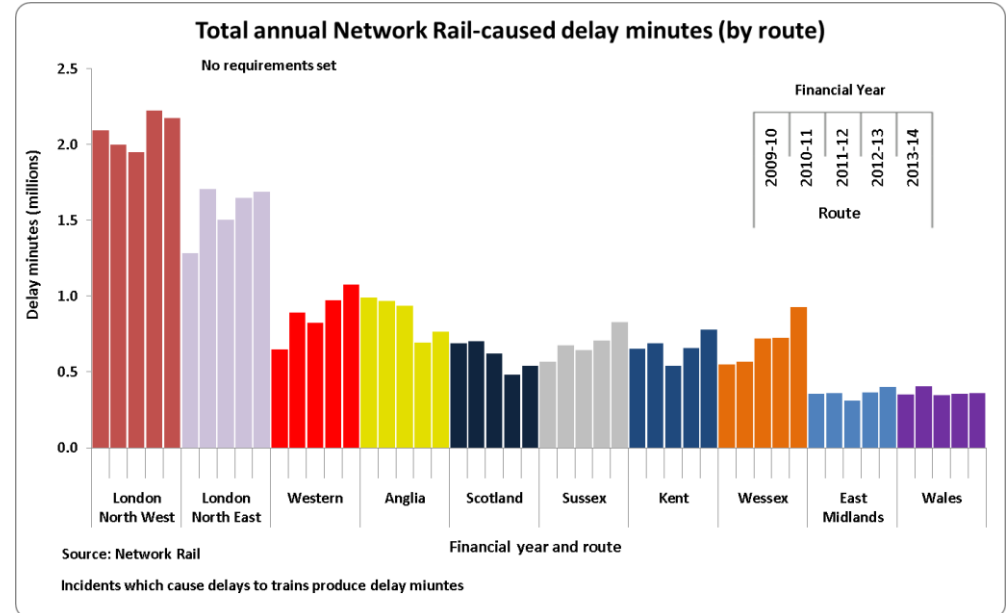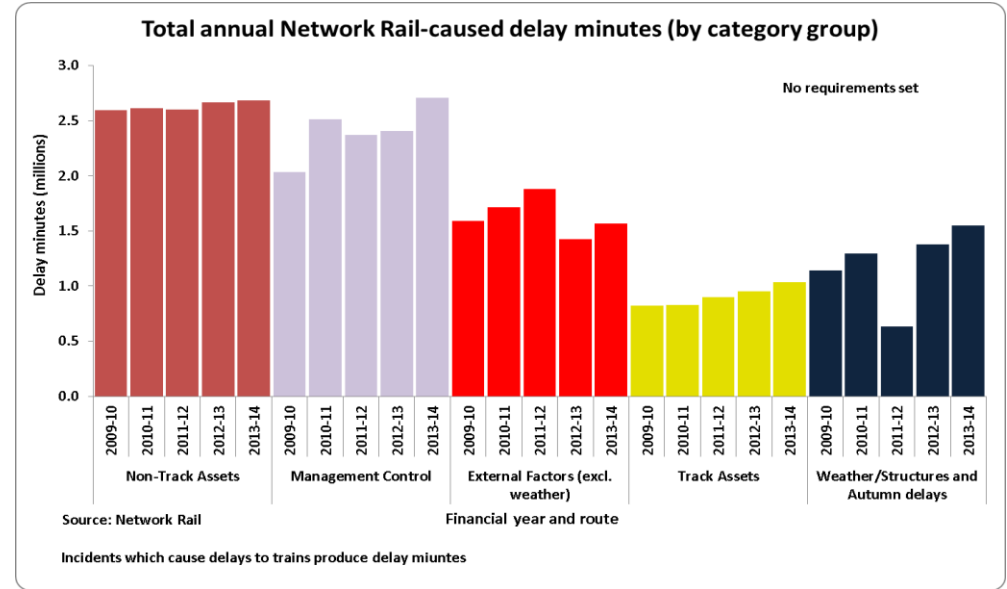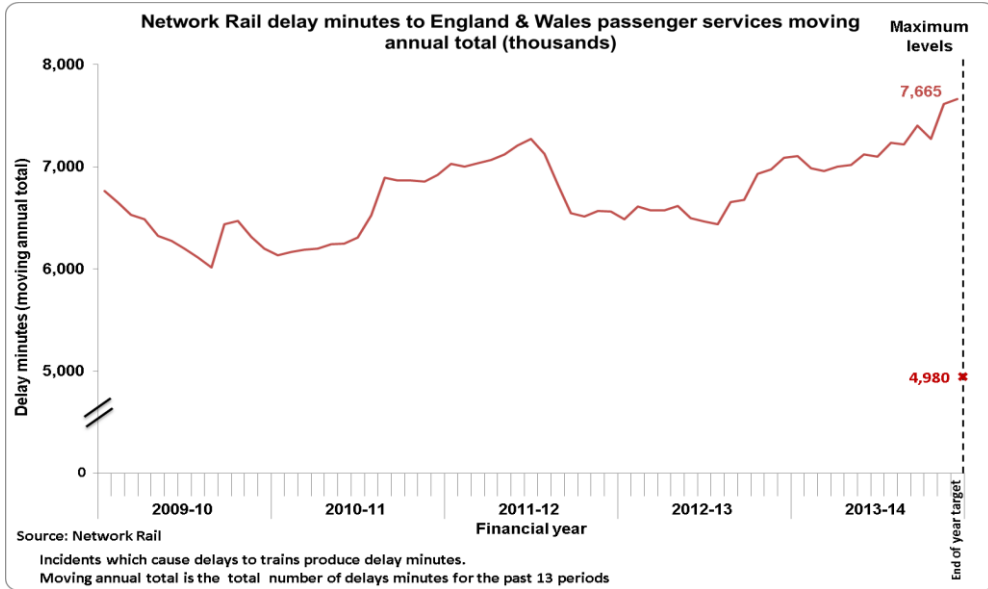
Causes of delay

Nationally, Network Rail was responsible for 62% of the 12.8 million industry delay minutes in 2013-14 affecting passengers. The remaining 38% of delay was caused by train operating companies either directly delaying their own services or being delayed by other operators.

Delays caused by one operator to another (referred to as a TOC on TOC delay) will vary depending upon the geographic location of the operation and the volume of rail traffic their train services run alongside. For instance Merseyrail is less prone to TOC on TOC delay as it is virtually the only operator throughout the Merseyside area. At the opposite end of the scale, CrossCountry may be more prone to delays caused by other operators as it often crosses the most densely used areas of the network where many other operators run services.

London Midland experienced just over 148,530 delay minutes in 2013-14; 49.9% more than target and 5.7% more than last year. There were some 72,813 minutes of TOC on TOC delays affecting Arriva Train Wales; 28.0% more than target and 10.9% more than last year.

The chart below shows how Network Rail has performed across the whole of CP4 in terms of delay minutes affecting passenger services in England and Wales.
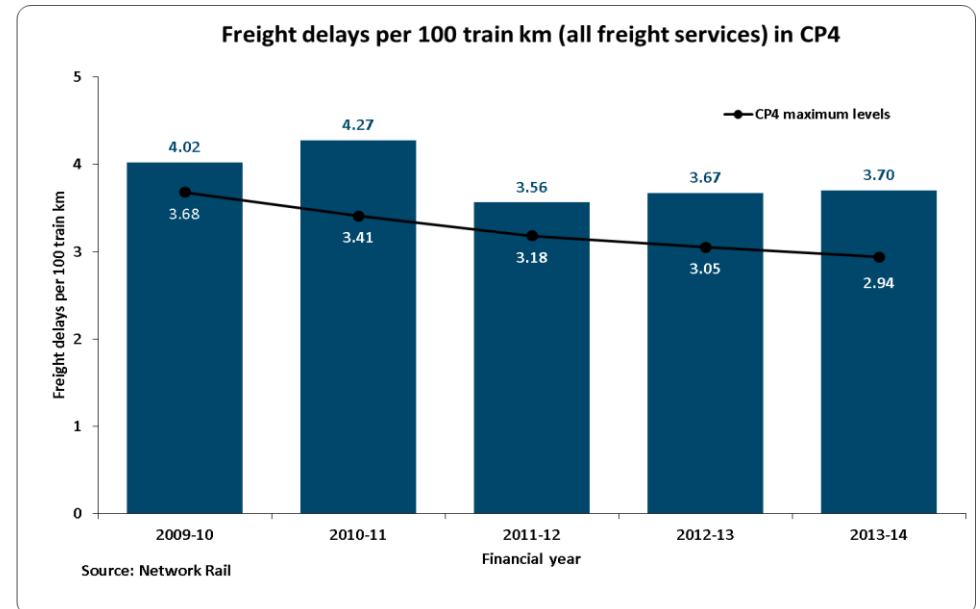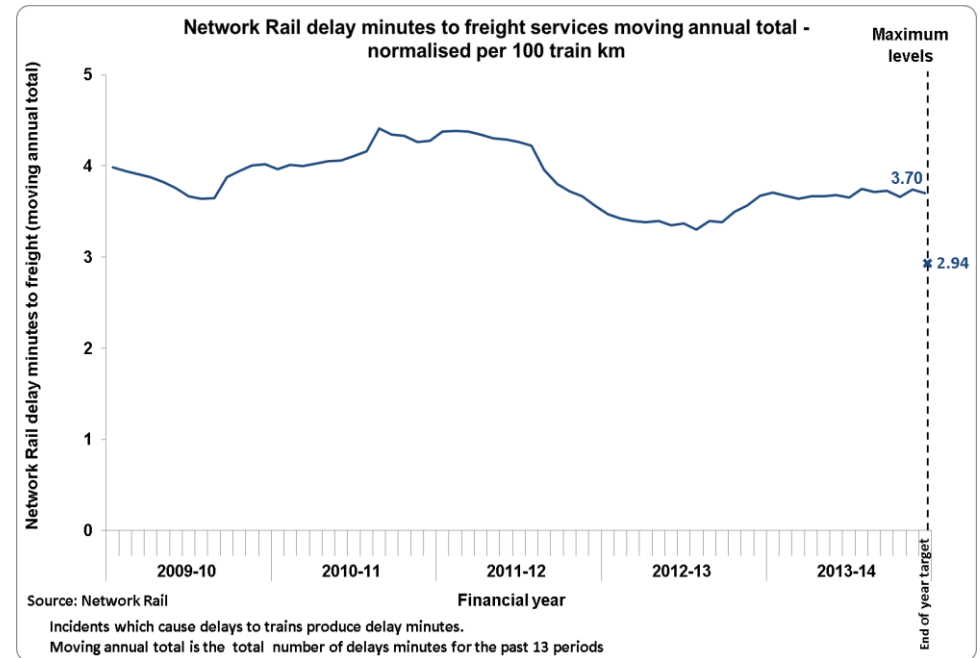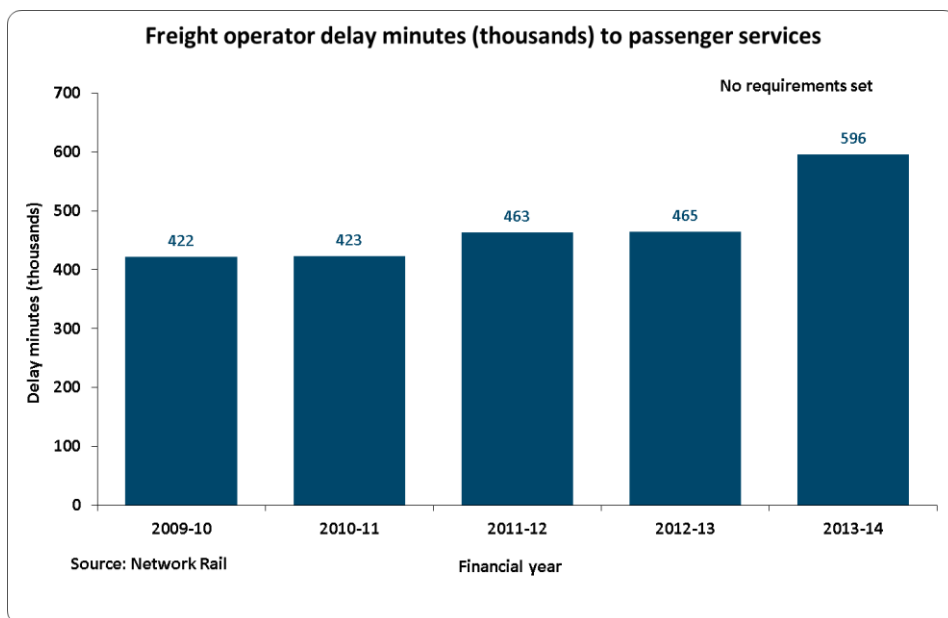
Network Rail delay minutes (thousands) to England and Wales passenger services in CP4

Source: Network Rail

Network Rail delay minutes to England & Wales passenger services moving annual total (thousands)

Maximum levels

7,665

4,980 ✕

End of year target

Source: Network Rail

Incidents which cause delays to trains produce delay minutes.
Moving annual total is the total number of delays minutes for the past 13 periods

Total annual Network Rail-caused delay minutes (by category group)

No requirements set

Non-Track Assets | Management Control | External Factors (excl. weather) | Track Assets | Weather/Structures and Autumn delays

Financial year and route

Source: Network Rail

Incidents which cause delays to trains produce delay miuntes

Total annual Network Rail-caused delay minutes (by route)

No requirements set

Financial Year

2009-10
2010-11
2011-12
2012-13
2013-14

Route

London North West | London North East | Western | Anglia | Scotland | Sussex | Kent | Wessex | East Midlands | Wales

Financial year and route

Source: Network Rail

Incidents which cause delays to trains produce delay miuntes

Delay to freight operators

Freight delay targets for CP4 are expressed in terms of Network Rail-caused delay per 100 train kilometres. This removes the effect of fluctuations in traffic volumes.

We found Network Rail in breach of its licence in December 2011 for non-delivery of its performance targets to the freight sector. Following this, the company worked with a Freight Recovery Board made up of its customers to agree steps needed to improve performance. The board worked well, with positive, collaborative engagement across the sector. However, freight delays continued to affect performance in the second half of CP4 and at the end of the control period the measure showed 3.70 Network Rail delay minutes per 100 train kilometres – 25.9% worse than target.

As part of our analysis of the issue, we asked the Freight Recovery Board in February for its views on Network Rail's performance, and whether it would wish us to investigate further. The view was that while there were concerns about how we had measured performance for freight over CP4, there was confidence in the new Freight Delivery Metric which will be used to measure performance in CP5. The board felt that at this stage an investigation into performance would not be helpful. We welcome this constructive engagement and the renewed focus on performance that is being taken forward in different work strands through the RDG Freight Group.

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Network Rail delay minutes to freight services moving annual total - normalised per 100 train km

Source: Network Rail

Incidents which cause delays to trains produce delay minutes.
Moving annual total is the total number of delays minutes for the past 13 periods

Freight delays per 100 train km (all freight services) in CP4

Source: Network Rail

Freight operator delay minutes (thousands) to passenger services

Source: Network Rail

Disruption from planned engineering work

Levels of disruption to passengers and freight trains from planned engineering work are measured by the possession disruption index. There are two metrics: PDI-P for disruption to passengers and PDI-F for disruption to freight customers.

Network Rail achieved the CP4 target for freight customers finishing the last quarter with a PDI-F MAA of 0.87. The target for passengers was not achieved, with a CP4 exit figure of 0.69. As the graph opposite shows, Network Rail achieved the CP4 target for PDI-P for most of the year, meaning that disruption to passengers was kept within expected parameters. However in the last quarter significant volumes of engineering works took place much of it in response to the adverse weather encountered over the previous quarter.

We recognise there is a trade-off between PDI-P and successful completion of enhancement, renewals and maintenance work that require possessions and we feel that given the current performance levels, the industry must be undertaking as many of these engineering works as possible to provide resilient infrastructure.

Furthermore, we believe that the issues that have led to the increase in the measure in recent periods are discrete rather than systemic (the volume of work and the impact of the severe weather on possessions). Our view is therefore that there is no value in investigating further.
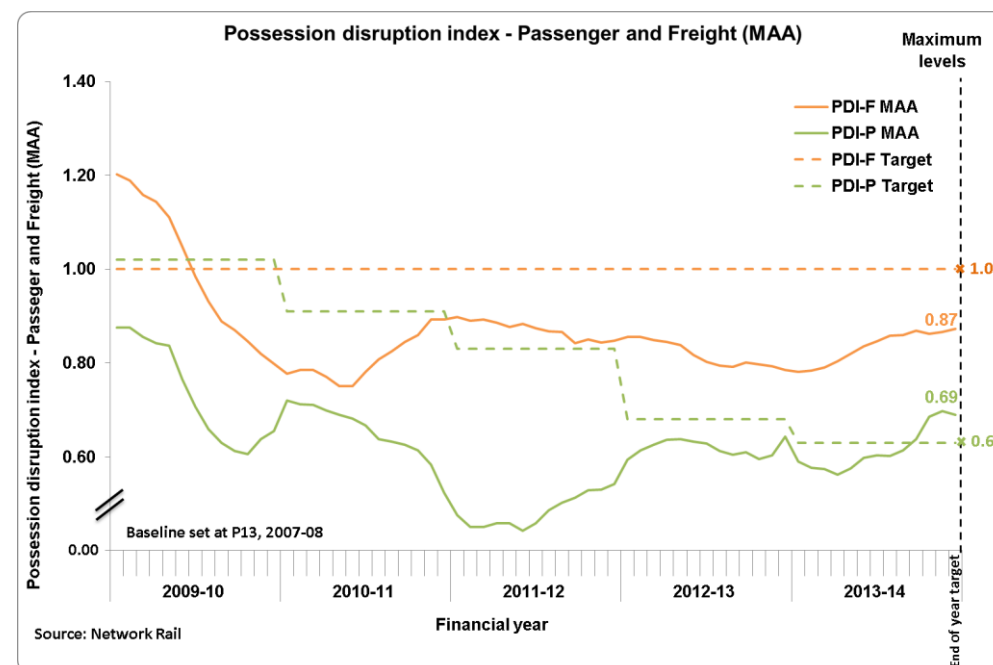
Network Rail's customer service

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In January 2014, Network Rail gave us the results of its independent annual autumn survey of its passenger and freight operator customers. This showed an eight percentage point decrease from 66% to 58% in passenger train operators' overall satisfaction (with Network Rail) over the year. Satisfaction with train performance was a key factor in the decrease, dropping by 22 percentage points to 31%. However, as the graph below shows, the trend across the whole of CP4 has been broadly positive.

Overall satisfaction with Network Rail - % satisfied

Source: Network Rail
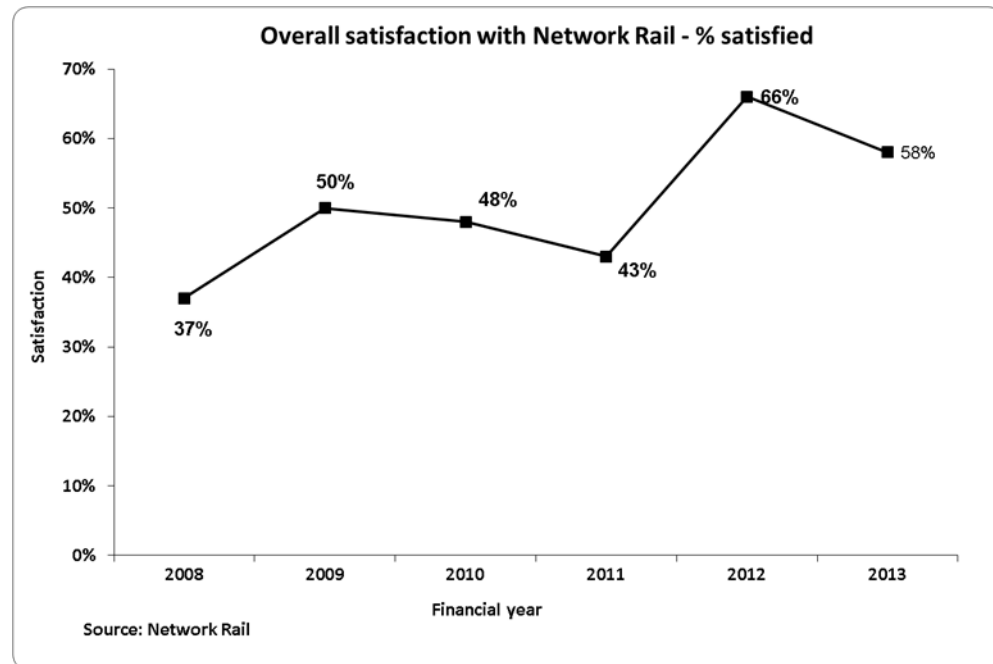
The autumn 2013 Passenger Focus National Rail Passenger Survey (NRPS) survey showed overall satisfaction (with journey) declining to 83%. This was a statistically significant decline when compared to the autumn 2012 survey with the largest falls for satisfaction with punctuality and reliability and how well the train company dealt with delays. The spring 2014 survey showed overall satisfaction at 82% with ratings for punctuality and reliability in the LSE sector significantly down on spring 2013.

Train performance, is to a significant extent within Network Rail's control and the declining satisfaction with performance identified in these surveys reinforces our focus on Network Rail's delivery of performance outputs.

Network Rail has confirmed in its CP5 delivery plan that it is committed to improving customer service. In support of this a customer service maturity model has been developed which, in addition to looking at reported customer satisfaction, takes the company's capability to deliver into account. The framework it has developed includes measures identified as impacting on customer satisfaction. Network Rail has committed to a number of critical next steps in its delivery plan, leading to full implementation and the maturity measures going live from April 2015.

We support the work that Network Rail has done to date but note that the model was not ready to go live from the beginning of the control period (April 2014). We will be monitoring delivery of the next steps set out in the delivery plan closely.

Asset management

Getting asset management right is key to improving safety and reliability of the railway, and reducing cost in the long run. It is also an important enabler for Network Rail in moving the company from a predominantly 'find and fix' approach to maintenance and renewal, to one which can be characterised as 'predict and prevent'.

Network Rail has improved its capability and asset management systems steadily through CP4, working towards excellence as measured by the widely recognised asset management excellence model (AMEM). In May 2013 the company achieved an important milestone on that journey with PAS55 certification indicating that it had reached a level of good practice. Since then it has continued to make progress, although it had only met two of the six targets by the time it made its submissions for the Strategic Business Plans in January 2013. The gap continued to narrow and as the table below shows by the end of CP4, the overall AMEM score was 1.1pp[1] behind target.

As part of the determination for CP5, ORR has set an output target at national level of 72% for each core group with a view to ensuring that the company reaches excellence by 2017.

Capability

Y

Network Rail's asset management improvement programme (AMIP) seeks to enhance capabilities in line with the AMEM model. The aim was to achieve 'best practice' by the end of March 2014. The independent reporter (AMCL) assessed Network Rail's progress against AMIP targets as at June 2014, and although the company met just two of the six targets, AMCL found that it had improved its capability in all core groups since the last review in 2013. The table below shows progress against the AMEM core groups through the control period.

Core groups	CP4 Start 2009	IIP Sept 2011	SBP Jan 2013	CP4 End as at June 2014	
	Actual	Actual	Actual	Target	Actual
Asset management strategy & planning	56	61	66	67.3	**67.3**
Whole-life cost justification	47	52	59	63.5	**60.4**
Lifecycle delivery	65	66	69	72.3	**71.4**
Asset knowledge	52	55	61	67.2	**66.9**
Organisation & people	63	64	67	73.6	**69.2**
Risks & review	50	59	61	60.8	**61.8**
Overall	**56**	**60**	**64**	**67.8**	**66.7**

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[1] *The findings were in draft at the time of writing.*

Asset management strategy and planning: Network Rail made good progress in this area and achieved its target. Looking ahead, it needs to ensure that the asset policies which underpin its strategic business plan (SBP) are embedded and deliver the expected benefits. It is critical that resources are aligned to common objectives. We recognise the effort that Network Rail put into its asset management plans. Although some further work is required on civils and buildings, in general the plans are improved compared to previous submissions.

Whole-life cost justification: Of the three activities in this group Network Rail achieved only one of the targets, for capex evaluation. Opex evaluation is ten percentage points away from its target. We expect to see more progress in this area, and in understanding unit costs so that the company can make more reliable cost-risk trade-offs. Although some progress has been made with risk based maintenance, this programme needs to be accelerated.

Lifecycle delivery: This area is quite advanced in a number of activities according to AMCL, particularly for asset creation. Resource and possession management did not achieve target with a lack of clarity of the accountabilities between the national supply chain (NSC) and the routes and validation of CP5 resource forecasts. AMCL rated the incident response activity highly although some key elements of the fault identification process still not complete. Equally the asset rationalisation activity area achieved target although it is not considered to be in the best practice range yet.

Asset knowledge: Robust asset information is critical to all aspects of asset management, whether for strategic planning or day to day operations. We acknowledge that good work has been done in this area and will continue to monitor progress in

implementing new decision support tools such as LADS (linear assets decision support tool for track assets) which will provide greater insight into where to deploy resources in order to drive further improvements in reliability and performance. AMCL found that there is still some confusion of responsibility for data quality and that assurance processes have not yet been fully implemented. This is an area which requires particular attention given Network Rail's need to underpin the decision support tools with good data and to achieve a grading of A2 (a high rating for data reliability and accuracy) in CP5.

Organisation and people: Organisational structure, culture and competence remain behind target although it is recognised that this core group is relatively advanced overall compared to the others. Network Rail needs to ensure its business objectives are aligned with workforce skills, staff selection/recruitment and training and development. The programme of route level assessments currently being completed should reveal areas for improvement in this regard.

Risk and review: Overall Network Rail achieved its target for this core group. However, it was behind in two particular activities: risk assessment (only marginally) and review and audit. We recognise the good work that has been carried out in the area of weather and climate change. Recent events demonstrated the need to accelerate this programme further in order to improve the reliability and resilience of the network. On review and audit Network Rail is behind target. Earlier in CP4 we asked the company about how its assurance programme would ensure consistency and compliance across all its routes, for example with its asset policies. We recognise that Network Rail has improved its assurance reporting and we will continue to monitor this though CP5.

Asset renewals

Overall renewals delivery and expenditure

In this section we compare the volume of renewals delivered by Network Rail during 2013-14, and for CP4 as a whole. Unless otherwise indicated, the comparison is against the company's 2010 Delivery Plan (DP10), which set out the volume of renewals required according to its CP4 asset policies. DP10 did not separate Scotland from England & Wales, so this comparison is for Great Britain as a whole.

Track renewals

During 2013-14 Network Rail renewed more switches and crossings than planned, recovering the cumulative 3% shortfall from years 1-4 of CP4 to finish the control period 1% ahead. Plain line renewal was 2% below DP10, which reduced the 8% cumulative shortfall from years 1-4 to a 7% shortfall for the control period as a whole. This shortfall was due to underperformance of high output plant, and contractor underdelivery. We are satisfied it will not adversely affect the long term sustainability of the network, provided Network Rail delivers the volume of renewal work planned for CP5.

Civil engineering renewals

Earthworks renewal volumes finished the control period 4% below the company's 2012 Delivery Plan (DP12) although volumes in 2013-14 were 3% above DP12. This continued an upward trend in annual volumes seen in the past few years. One reason for the increase in volumes this year was the need for emergency repairs arising from the severe weather during the winter months.

Reviewed as a portfolio over the control period, the structures volumes were delivered in line with DP12. Within the current financial year however, structures volumes were 12% below those stated in DP12. Volume delivery in this category has been on a declining trend through the control period, which is of particular note as the volumes stated in the control period 5 delivery plan for 2014-15 are increased by 56% compared to 2013-14. We have emphasised the importance of doing this and the issue will be kept under close review through regular meetings.

In March 2015, Network Rail will be submitting its civil engineering delivery plans for 2016-17 to 2018-19 as an input to the Civils Adjustment Mechanism. Delivering the stated volumes for 2014-15 will strengthen the credibility of the proposed volumes for subsequent years.

Network Rail has completed the additional civil engineering maintenance and renewals works funded through the government's £250 million fiscal stimulus package. In total, 1017 projects were completed and assessed by an independent reporter as generally giving good value for money and reducing safety risk on the railway. The projects were procured and delivered well in a short timescale.

Signalling renewals

Network Rail delivered substantially more signalling renewals during 2013-14 than in the preceding years to finish the control period exactly on plan. The planned ERTMS renewals relating to Crossrail have been delivered as conventional signalling with a reduced scope. A total of 37 level crossings were renewed during 2013-14, bringing the CP4 total to 148, which is significantly below the 234 planned in DP10. Some projects

were cancelled when the crossing was closed, and some were reprogrammed to align with re-signalling schemes planned for CP5. In total 62 crossing renewals have been carried over into CP5, but almost all of these have more than five years remaining life so the slippage will not affect sustainability.

Electrification renewals

Network Rail finished 2013-14 significantly behind the planned volume of work on DC power systems and for CP4 as a whole, only about 60% of the work planned was delivered. The shortfall was mainly due to contractor issues, and is now planned for delivery early in CP5. The volume of overhead line equipment (OLE) renewals delivered on the Great Eastern route was also significantly less than planned for CP4, but in this case the work has been reprogrammed to reduce disruption to weekend train services and will be completed during CP5. Network Rail has also deferred renewal of the SCADA control system into CP5, to align it with the new Rail Operating Centres programme.

Asset information

Civil engineering assets

Network Rail is continuing to improve its civil engineering asset data in preparation for the introduction of a new asset register during CP5. Regular reports to ORR have indicated that the accuracy of the data for significant asset types including bridges and tunnels has improved, with only small, explained variances between reports. However, more work is needed to improve the data for other asset types including culverts, retaining walls and earthworks. We will continue to monitor progress during CP5.

Asset condition

Civil engineering management

Management of the safety of civil engineering assets is in part achieved through strength assessments and on site examinations. Earlier in the control period, Network Rail was significantly behind in its programme of bridge strength assessments, which meant ORR focusing more closely and increasing monitoring of this activity. In quarter 4, Network Rail completed its assessment backlog recovery programme as required by ORR, so it now has more robust data on the capability of its bridge assets. The company will issue a report summarising the emerging findings during quarter 1 of 2014-15. The contract for conducting assessments and examinations in CP5 has been awarded and we will review performance very closely to ensure that the Network Rail does not allow a backlog to build up again.

ORR is continuing to monitor the implementation or "embedment" of the Buildings and Civils Asset Management (BCAM) Programme in each operating route. Progress is acceptable in most areas, although we expect Network Rail to maintain sufficient numbers of competent staff to ensure that the benefits of the programme are realised.

Asset performance

Infrastructure incidents causing delay

Nationally, there were some 42,017 infrastructure incidents (affecting track, non-track and other assets), up 6.3% on 2012-13. Infrastructure delays accounted for around half of the overall delays with some 4.5 million minutes. The number of infrastructure incidents causing delay had been gradually reducing before 2013-14. But at the same time the associated minutes of delay per incident has been increasing.

Network Rail's [track geometry](#) has improved towards the end of CP4 having met its target overall. However track geometry for Kent and Sussex remain below the national average and we will continue to monitor improvements in these routes. Network Rail has not met its overall track faults target. Nationally, delay minutes caused by temporary speed restrictions and track faults have increased in 2013-14 by 40% and 7% respectively. However the picture varies with some routes performing well and others not meeting their target.

Earthworks and structures

Network Rail has also completed a review of its arrangements for determining the condition of its earthworks assets and identified a number of improvements which can be made. ORR will be seeking assurance that these improvements have been implemented effectively. The company has rolled out across the routes improved arrangements for identifying slopes which, during adverse weather, pose the highest risk. These new arrangements, which were originally developed in Scotland in response to regulatory action, should improve Network Rail's ability to manage the risks associated with potential slope failures when bad weather is forecast.

The winter of 2013-14 saw intensive rainfall and storm conditions, particularly across areas of Wales and the west and southeast of England. The railway was flooded for prolonged periods in the Somerset Levels and there were numerous asset failures, most notably the Dawlish coastal defence wall. Network Rail's reactive work to repair the assets, which included failed earthworks at approximately 140 locations, has been commendable, but we need to ensure lessons are learnt from these failures. In the coming months we will be reviewing Network Rail's plans to improve the resilience of the railway, that we hope will reduce disruption to passengers and freight customers should similar weather events occur in the future.

Asset Information - ORBIS Programme

Network Rail has continued to progress its asset information improvement programme, having identified significant efficiency benefits in its strategic business plans from the offering rail better information services (ORBIS) programme. Although this programme began behind schedule, ORBIS has provided some early wins, for example enabling track workers to locate assets on the ground accurately through handheld computers, better mobile communications and a reduction in paper based systems. Decision support tools (DST) such as [LADS](#) will enable Network Rail to better collate and analyse diverse information in one system. This in turn will enable it to better target maintenance and renewals activity. Equally important is the quality of the underlying data needed to support these systems and ensure the benefits are realised. We will be monitoring Network Rail's assurance processes to ensure that the data meets the required standard. We have set out outputs for ORBIS in CP5 to support the requirement to raise the data quality to A2 standard.

Environmental sustainability

There are no outputs for environmental sustainability in CP4. Network Rail has undertaken a number of initiatives to reduce carbon emissions, including relocation to its new BREEAM Excellent HQ at Milton Keynes, and has committed to further reductions throughout CP5. We recognise Network Rail's progress in developing route level climate change and extreme weather resilience plans, which will be published in September 2014. We are also encouraged by Network Rail's delivery plan, which includes a commitment to measuring and reducing carbon embedded in new infrastructure.

Developing the network

Network Rail has been largely successful in delivering the major portfolio of enhancements during CP4. These projects were mostly funded in 2008, but there have been significant changes in the control period. Some projects have been deferred to CP5 to align with the introduction of new rolling stock, and additional investment announced such as the commencement of a major programme of electrification. The net funding in CP4 amounts to £9.1bn (2013-14 prices).

Network Rail had a total of 118 regulated output milestones to deliver in CP4. These milestones define the 'project completion dates' when enhanced infrastructure is ready for use for new rail services (such as longer trains, faster journey times or the removal of bottle necks that cause delays). At the end of CP4 the company had delivered 98 of these 118 milestones early or on time. Of the 20 that were not delivered on time only one had a notable impact on Network Rail's customers, three had a partial impact (for example, a new station entrance at Cardiff Queen Street not ready for use) with the remaining 16 having zero impact because the late completion did not disrupt passengers or risk delay to the start of any new services.

The one missed milestone that has notably impacted customers in CP4 was the journey time improvements between St Pancras and Sheffield, where the majority of infrastructure upgrades were completed on time, but some work had to be deferred. This meant that when the new December 2013 timetable was introduced, the train operator was not able to achieve the projected faster journey time consistently. The company is working hard to complete the necessary work so

that the new timetable can operate reliably and we have concluded that it would not be proportionate to take formal enforcement action.

We will however be making a financial adjustment for these missed milestones and will set these out in our *Annual efficiency and finance assessment of Network Rail*, due to be published later in the summer.

Christmas and New Year 2013-14 saw the largest peak in volumes of engineering work over the whole control period, with work on 300 projects over 1300 worksites. Network Rail delivered the planned blockade work despite the severe weather over the period. Key to this success were the efforts Network Rail have made in CP4 to improve its 'readiness reviews' ahead of major peaks in engineering work over bank holidays, for example ensuring critical resources are allocated and that demand meets supply chain capacity.

Some examples of achievements in the year include:

- the completion of a platform lengthening programme and power supply upgrades to enable longer trains to operate for Southern and Southeastern trains and at the southern end of the East Coast Main Line;

- Reading depot is now fully operational and in use by First Great Western;

- completion of the Kings Cross concourse;

- Bletchley remodelling delivering capacity and performance improvements on the west coast mainline; and

- the project to roll-out GSM-R is largely complete. While it has been agreed with stakeholders to slip the roll-out on some freight-only branch lines and Merseyrail into CP5, the majority of the country is now able to take advantage of the safety and performance benefits that the new system provides. For example, drivers are able to make calls in deep cuttings and tunnels. Looking ahead the project will lead to further benefits, for example allowing train controllers to speak directly to passengers on trains in times of disruption.

Projects at risk

◀ Y

We first questioned Network Rail in August 2013 about the deliverability of the Great Western electrification programme because we did not have confidence that the new electrified routes would be ready in time for the December 2016 timetable. Since then Network Rail has implemented a programme to significantly reconfigure the governance and project management arrangements of this complex route-wide upgrade. The improvements are now in place, including strengthened capability in areas such as system engineering and integrated planning, but we are not satisfied as these improvements were implemented too late. We are meeting with Network Rail regularly to build confidence that the December

2016 timetable is deliverable, but the programme involves complex technical and operational challenges and we are not yet wholly convinced that the deliverables in 2016 will be achieved.

Related to this concern, we are commissioning an independent review to check that similar large programmes are set up to succeed taking into account the complexities and challenges of 'whole-system' rail upgrades.

On the wider electrification programme, we note more generally that during design and development stages, the cost estimates for some projects are now significantly greater than early stage estimates that were used for business planning and government funding decisions. We recognised this uncertainty in PR13 and have put in place the enhancements cost adjustment mechanism (ECAM). This will ensure that we only set the funding baseline (that Network Rail is incentivised against) when these projects have higher cost certainty.

The Strategic Freight Network Fund is a £280m ring-fenced fund established to provide enhanced freight capability on the network. Some projects within this fund have been deferred to CP5. Although these deferrals have been agreed with government and stakeholders, the full portfolio of projects were not completed as originally planned. Together with Network Rail we are therefore implementing tighter monitoring processes to ensure that the CP5 equivalent fund (and other funds) do not encounter similar delays.

Efficiency & expenditure

We are currently in the process of reviewing Network Rail's efficiency, expenditure and financial performance in CP4 and will report on our assessment in our annual efficiency and finance assessment in the autumn. Below is a brief overview of the key issues.

Y ◄

Efficiency

The PR08 determination required Network Rail to make efficiency improvements in Great Britain of 21% across controllable operating, maintenance and renewals expenditure (OM&R) by the end of 2013-14. Including 'catch-up' from CP3, this equates to a required efficiency improvement of 23.5%. Network Rail's internal accounts for 2013-14 show that in Great Britain the company has overspent our PR08 determination and that it is behind the efficiency target agreed with us for the end of CP4.

In assessing the company's financial performance in CP4 we need to consider the reasons for the overspend and take account of non-delivery of outputs. We said in our PR08 determination that Network Rail should not benefit from a material non-delivery of its regulatory outputs and asset management issues, nor should it benefit from inconsistencies with our determination (e.g. the impact of deferred work on interest costs). We adjusted our assessment of Network Rail's financial performance in Great Britain of £995m in 2012-13 by £842m. Train performance has deteriorated compared to our requirements for 2013-14 and we are also considering other adjustments for consistency with our determination assumptions.

Expenditure

Network Rail's expenditure in England and Wales last year compared to our PR08 determination and its expenditure in 2012-13 are summarised below. We will report on these matters in more detail in our *Annual efficiency and finance assessment* in the autumn.

£m	2013-14 actual [1]	PR08 determination	2012-13 actual	PR08 variance	Prior year variance
	(A)	(B)	(C)	(B-A)	(C-A)
Controllable opex	973	716	878	-257	-95
Non-controllable opex	492	430	462	-62	-30
Maintenance	868	1,032	934	164	66
Renewals	3,364	1,981	2,530	-1,383	-834
Enhancements (PR08 funded)	1,549	708	1,542	-841	-7

£m	Cumulative Actual [1]	PR08 determination	PR08 variance
	(A)	(B)	(B-A)
Controllable opex	4,613	3,944	-669
Non-controllable opex	2,268	2,048	-220
Maintenance	5,020	5,581	561
Renewals	12,784	11,938	-846
Enhancements (PR08 funded)	6,708	8,382	1,674

[1] Based on unaudited data

Annex - CP4 regulated targets (England & Wales)

Key

| Achieved (green) |
| Narrowly missed (orange) |
| Not achieved (red) |

Output	CP4 Outturn
PPM – Long distance	Not achieved
PPM – London and Southeast	Not achieved
PPM - Regional	Not achieved
CaSL – LD	Not achieved
CaSL- LSE	Not achieved
CaSL - Regional	Achieved
NR Delay minutes - passenger	Not achieved
NR caused delays to freight	Not achieved
PDI-P	Narrowly missed
PDI-F	Achieved
Network Capability	Achieved
Station stewardship	Achieved
Enhancements	Narrowly missed
Safety metric	Achieved

We welcome your feedback on this publication. Please address your comments or queries to:

Train service performance:
Nigel Fisher on 020 7282 2112 or Nigel.Fisher@orr.gsi.gov.uk

Developing the network:
Andrew Wallace on 020 7282 2075 or Andrew.Wallace@orr.gsi.gov.uk

Asset management:
Marius Sultan on 020 7282 2114 or Marius.Sultan@orr.gsi.gov.uk

Efficiency and expenditure:
Gordon Cole on 020 7282 2184 or Gordon.Cole@orr.gsi.gov.uk

Statistics in this publication:
Sneha Patel on 0207 282 2037 or Sneha.Patel@orr.gsi.gov.uk

We publish the *Network Rail Monitor* every three months, focusing on Network Rail's delivery of its obligations to its customers and funders, for which it is mainly accountable under its network licence. We use colour flags to show at a glance our current level of concern with an issue:

Network Rail delivery is satisfactory or good. **G**

Network Rail delivery is currently unsatisfactory and/or we have some concerns about future delivery. We have raised the issue with Network Rail. **Y**

The issue is subject to special scrutiny, with intensive investigation and enhanced monitoring. **YR**

We have major concerns about current and/or future delivery. **R**

Network Rail Monitor: Scotland

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OGL