OFFICE of
RAIL REGULATION

ANNUAL ASSESSMENT OF NETWORK RAIL 2004-05

SEPTEMBER 2005

Contents

1. Executive summary

Overview

ORR's overall assessment of Network Rail's performance during 2004-05 is that the company has built on its achievements in 2003-04 and has continued to make good progress in the way in which it manages the network. It has achieved significant reductions in train delays and has improved its planning processes towards full restoration of the required notice period for temporary changes to timetables.

During 2004-05, Network Rail completed the process of transferring infrastructure maintenance work in-house, and evidence of progress is seen in a reduction in numbers of infrastructure incidents and failures. Most condition indicators confirm a steady improvement in the overall condition of the network.

At the same time, Network Rail has underspent in operating, maintenance and renewals and enhancement expenditure. The majority of the underspend is due to deferral of expenditure to future years in the control period. However, Network Rail has also outperformed the unit cost efficiency assumptions established in the Access Charges Review 2003 (ACR2003). The company has also underspent on enhancements, due to a mix of externally determined changes in scheme scope, deferral to later years and efficiency improvement.

As the company re-organised, there was also some slippage in the delivery of key aspects of Network Rail's strategy for managing asset information, but more positively the opportunity has been taken to strengthen the links between asset data and its application to improved asset management and business planning.

A key challenge for Network Rail now is to move on from its focus on addressing the immediate and short-term issues and to begin delivering improvements for the long-term. As it does so, it must continue to focus upon improving performance, network condition and efficiency into the future.

The key messages from ORR's monitoring and evaluation of Network Rail's performance during 2004-05 are summarised below.

Summary assessment

Train performance

- The Public Performance Measure (PPM), the annualised punctuality measure for franchised passenger operators, improved from 81.2% of all trains arriving within the tolerance level at March 2004 to 83.6% at March 2005.

- Delay attributable to Network Rail fell from 13.7 million minutes in 2003-04 to 11.4 million minutes in 2004-05, significantly better than the target of 12.3 million minutes set in the final conclusions of the review of access charges in December 2003.

- For the future, Network Rail has now taken on new responsibilities for industry leadership in performance improvement. It needs to continue to work in partnership with train companies to deliver improved performance for the remainder of the control period to March 2009 and to achieve, and indeed exceed, the targets in ACR2003.

Timetable planning

- After failing in 2003-04 to fulfil its network licence requirement to give sufficient advance warning of temporary changes to the timetable, Network Rail agreed a recovery plan with ORR. The company made substantial progress in meeting the milestones in the plan and is now generally meeting its obligations.

Network capability

- ORR has concerns over the quantification of baseline network capability and plans to use the independent reporter to review all aspects of the process once the new reporter contract has been let in November 2005.

Possessions

- ORR believes that there is considerable scope for Network Rail to improve the efficiency with which it plans, manages and utilises its engineering access. Such improvements need to be given very high priority.

Infrastructure condition

- Network Rail achieved significant reductions in the number of asset incidents and failures and the amount of delay they cause. Reported figures indicate that the infrastructure has not only performed more reliably in the year under review, but that it has also been managed more effectively.

- The total delay to train services caused by infrastructure failures fell by 23%, and the average delay per incident was 15% lower in 2004-05 compared to 2003-04.

- The Asset Stewardship Index continues to outperform the ORR targets set in ACR2003 and Network Rail's internal targets. The overall figure for the year was 16% better than the company's own target. Taken together with asset reliability data, this indicates that there has been substantial improvement in the overall condition of all types of infrastructure asset.

Stations and depots

- Network Rail has not progressed the action plan to reform the station condition index and did not put an improved system in place in 2004-05. We expect this to be dealt with as a matter of urgency in 2005-06.

Asset knowledge

- There has been some slippage in delivery of the asset information strategy, but Network Rail has been working to strengthen the application of asset information to its business planning processes, and it has now committed itself to a revised strategy.

Activity volumes

- Track renewals broadly met the planned volumes for the year and the minor shortfalls identified are not considered to have had a detrimental effect on the network when taken in conjunction with the improved maintenance regime that now exists.

- The volume of signalling renewals achieved in 2004-05 was below that identified as necessary in the longer-term, as assessed in ORR's Signalling Review, draft conclusions of which were published by ORR on 7 September 2005.

- Good progress was made during the year on the upgrading of the Southern region power supply in support of the introduction of new trains to replace slam door stock.

Expenditure and efficiency

- For 2004-05, £4.3bn in controllable non-West Coast route modernisation (WCRM) operations, maintenance and renewal (OMR) expenditure was projected, incorporating an 8% improvement in unit costs across OMR. Actual controllable non-WCRM OMR expenditure amounted to £3.8bn, an underspend of £527m, or 12%.

- Almost 80% of Network Rail's OMR underspend was in the renewals category. Non-WCRM renewals expenditure came in more than 20% below budget. Underspend in operating expenditure accounted for the majority of the remainder.

- Network Rail outperformed its 8% unit cost efficiency target for OMR in 2004-05, particularly in the operating expenditure category.

- The total amount of the underspend that can be attributed to outperformance of the expenditure assumptions made at the ACR2003 is £165m.

Financing

- Network Rail issued £3.6bn in new debt. Net debt now stands at £15.6bn, some £1.8bn lower than budgeted largely as a result of the significant underspend on OMR & E. The net debt to regulatory asset base (RAB) ratio, at 77%, remains comfortably below the 85% trigger level for a remedial plan set out in Condition 29 of the Network Licence.

- As Network Rail has deferred a large amount of activity from 2004-05 until later in the control period, ORR expects the variance between actual and budgeted net debt to fall over the later years of the control period once the rescheduled activity is conducted. Network Rail forecasts that its net debt will increase to £19.4billion, in nominal terms, by March 2006 and to £20.4 billion by the end of the control period in March 2009.

- At the end of March 2005, the Regulatory Asset Base (RAB) actually stood at £20.46 billion, £943 million less than projected in ACR2003. Although the majority of the variance is due to the deferral of grant income, £330 million is due to underspend on enhancements funded on an emerging cost basis. In addition, the reported RAB includes £52 million in investments not funded in ACR2003 and yet to be approved by ORR.

Major projects

- Network Rail's total expenditure on enhancements during 2004-05 was £652 million, compared to the ACR2003 assumed expenditure of £1086 million, a variance of £434 million. The principal reason for this difference was Network Rail's underspend of £108 million on health and safety schemes and of £319 million on the "transition schemes" (Southern region new trains programme (SRNTP), Channel Tunnel Rail Link (CTRL) blockade and Thameslink 2000 development).

- The underspend of £236 million in the year (£274 million against an assumption of £510 million) on the SRNTP was primarily due to Strategic Rail Authority (SRA)-led reductions in scope and management efficiencies achieved by the joint SRA/Network Rail project team.

- The current forecast expenditure on the WCRM project is higher than the regulatory assumption at the ACR2003 by £363 million (12%). From this shortfall, Network Rail has identified and committed to savings of £104 million. ORR has written to Network Rail to make it clear that it is expected to deliver the outputs, in terms of journey time and capacity improvements and asset performance, without any increase in funding.

Customer and supplier satisfaction

- Network Rail commissioned a MORI survey of customer satisfaction in 2004-05. The level of satisfaction amongst passenger train operators improved, but fell amongst freight operators. The survey concluded that Network Rail's customers feel that it still cannot be trusted to do the best it can and that it does not understand the business needs of train operators.

The way forward

Annex B brings together the action points for Network Rail in the current and future years. We will monitor the company's progress with achieving these, with particular reference to:

- Continuing improvements in train performance through reductions in delay attributable to Network Rail.

- Quantification of baseline network capability.

- Delivery of the milestones in the asset information strategy.

- Continuing improvements in infrastructure condition where necessary to meet at least the funded output targets, and to ensure that these improvements are achieved consistently across the network. We expect Network Rail to identify and address specific areas where its train operator customers are experiencing less than what is reasonable to expect in a network where most indicators are improving.

- Reform of the station condition index.

- Improvements in the monitoring of unit costs.

- Developing criteria for the use of any outperformance OMR expenditure assumptions.

Annex C sets out the actions for ORR arising from this assessment.

2004-05 was the first year of the five-year control period covered by ACR2003 and Network Rail has made satisfactory progress towards achieving the defined outputs. Further progress will be monitored in subsequent annual assessments and in the *Network Rail Monitor*, published quarterly by ORR.

2. Introduction

Purpose of document

2.1   This is the second published annual statement[1] by the Office of Rail Regulation (ORR) assessing Network Rail's performance in operating, maintaining, renewing and developing the mainline national rail network. It covers primarily the year from April 2004 to March 2005, but also highlights any significant developments since 31 March 2005. It consolidates our analysis of Network Rail's performance carried out during the year and allows the company's customers, funders, members, users and other stakeholders to see how well the company is performing.

2.2   The assessment reflects:

- on-going monitoring of Network Rail throughout the year;

- consideration of Network Rail's 2005 annual return[2] to ORR against its 2004 business plan and the ACR2003[3] determination;

- the audit of Network Rail's 2005 annual return by the independent reporters, available on ORR's website[4]; and

- issues highlighted in last year's assessment.

2.3   Since the publication of last year's assessment, we have begun the quarterly publication of the *Network Rail Monitor*[5] on our website.   This monitors Network Rail's current progress against a range of key performance indicators (KPIs) and serves to provide an early warning of where Network Rail's performance may give cause for concern.

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[1]   The first was entitled *Statement on Network Rail's Stewardship of the National Rail Network 2003-04.* ORR November 2004.

[2]   *Annual Return 2005*. Network Rail, July 2005.

[3]   *Access charges review: Final conclusions*. Office of the Rail Regulator, December 2003

[4]   *Independent Reporter A Annual Return 2005 Final Report*. Halcrow Group Limited, September 2005, and *Independent Reporter B Annual Return 2005 Final Report*. Mouchel Parkman, September 2005.

[5]   Visit http:/www.rail-reg.gov.uk/server/show/ConWebdoc.7027 to see the Network Rail Monitor.

2.4   It should be noted that the majority of expenditure figures in this assessment are derived from Network Rail's audited Regulatory Accounts and annual return.   As the expenditure data used in the *Network Rail Monitor* is not audited, there are some minor differences between the data reported in the fourth quarter (Q4) *Network Rail Monitor* published in June 2005 and the data reported here, due to amendments following the audit process. Furthermore, the *Network Rail Monitor* compares (un-audited) expenditure and Network Rail's own budgets, whereas this assessment compares the audited data with the projections from the ACR2003.   Network Rail's own budgets are slightly different to the ACR2003 projections.

Scope of the assessment

2.5   In order to give a complete picture, this assessment covers most aspects of Network Rail's activities: expenditure, maintenance, renewal, enhancement, asset knowledge, train operations, train performance and timetabling.

2.6   Safety is an integral part of everything that Network Rail does. The current safety regulator for the rail industry is the Health and Safety Executive (HSE). The parts of HSE specifically concerned with rail are Her Majesty's Railway Inspectorate (HMRI) and the Rail Policy Division. ORR maintains a regular dialogue with HSE/HMRI. HSE publishes an annual review[6] of rail safety performance and this includes coverage of Network Rail's infrastructure, so to avoid duplication our assessment of does not address safety.

2.7   The Railways Act 2005 was given Royal Assent on 7 April 2005. This is the first step towards ORR becoming the combined safety and economic regulator. Further regulations supporting the Railways Act will need to be put in place and arrangements made, including the appropriate transfer of staff from HSE before the transfer of responsibility can take place. ORR has issued two safety bulletins[7], setting out the programme of work and progress made.

Structure of the document

2.8   The initial focus of this document is on the outputs that Network Rail is expected to deliver. **Chapter 3** assesses the impact of the company's

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[6]   This may be read at: http://www.hse.gov.uk/railways/annualreport04/index.htm.

[7]   Bulletin No.1 (http://www.rail-reg.gov.uk/upload/pdf/safetybltn1.pdf) and Bulletin No.2 (http://www.rail-reg.gov.uk/upload/pdf/244.pdf).

operation and management of the network on train services provided by its customers, with particular emphasis on delay caused directly by Network Rail. Of concern in our 2004 statement was the failure of the company in 2003-04 to fulfil its obligation in respect of timetabling and we assess the delivery of the agreed recovery plan.

2.9   **Chapter 4** examines the extent to which Network Rail is managing the condition of the infrastructure of the network in terms of the reliability of the physical assets and their quality. It is imperative that the company has detailed and accurate knowledge of those assets and we assess progress with the development of systems and processes for capturing and maintaining asset data.

2.10   Physical assets eventually wear out and need to be replaced. **Chapter 5** examining the extent to which the projected level of renewal activity to maintain the network at a defined level has been carried out.

2.11   As a monopoly supplier, Network Rail does not have the pressure of competition to drive increases in efficiency. In carrying out ACR2003, we made assumptions about levels of expenditure and increases in efficiency. **Chapter 6** compares expenditure with the allowances and assesses the extent to which Network Rail is achieving the efficiency assumptions.

2.12   **Chapter 7** looks at the financial health of the company, with particular emphasis on levels of debt in relation to the regulatory asset base. **Chapter 8** focuses on the major investment projects that Network Rail is currently engaged in and assesses the extent to which the company is delivering the outputs specified.

2.13   Network Rail's customers include train operators that buy the right to use the network. These train companies have no alternative supplier to turn to should they be dissatisfied with the product. **Chapter 9** assesses satisfaction levels amongst Network Rail's customers.

Monitoring of Network Rail

2.14   Monitoring Network Rail's performance is a key role for ORR, in order to ensure that the company is properly responding to incentives to deliver the required outputs specified in the most recent review of track access charges and that it has sufficient information to both carry on its business efficiently

and inform future assessments of access charges. Specific targets for the company for the period April 2004 to March 2009 were set out in the final conclusions of the most recent review of access charges in December 2003.

2.15   In addition to the specific requirements of ACR2003, we monitor the company's outputs against its business plans, which set out its detailed plans for achieving targets. We also monitor the company's compliance with the conditions of its Network Licence.

2.16   The measures, associated targets and achievements for 2004-05 are set out in full in Annex A.

Reporters

2.17   Independent reporters play an important role in the monitoring of Network Rail and the validation of the information provided to ORR. Since 2002 they have audited the information contained in Network Rail's annual return and the internal processes by which it is produced. Their audit reports are published on ORR's website.

2.18   More recently, an additional area of joint investigation for the reporters has been an analysis of underspend in 2004-05. The findings of this analysis support the analysis of expenditure and efficiency in chapter 6.

2.19   The contract for the provision of independent reporter services has recently been re-tendered, to run from November 2005 and to include a wider range of services. This is a reflection of the value to both ORR and Network Rail of independent audit and verification of data and systems and the changing roles of both organisations.   Core services are to include: the annual return; business planning and asset management; major investment projects; and the emerging information network.

Feedback

2.20   Although this publication is not a consultation document, comments on the content are welcome and can be sent to: brian.hatfield@orr.gsi.gov.uk.

3.   Train operations

3.1   In this chapter we review Network Rail's performance in relation to:

- reducing delay to train services, focusing on the Public Performance Measure (PPM) and delay attributable to Network Rail;

- meeting its obligations to customers and passengers in respect of changes to the timetable;

- managing the operation of the network;

- meeting its obligations in respect of the capability of the network to meet the needs of customers; and

- managing possession of the network for maintenance and renewal.

Train performance

(PPM, the annualised punctuality measure for franchised passenger operators, improved from 81.2% of all trains arriving within the tolerance level at March 2004 to 83.6% at March 2005.

Delay attributable to Network Rail fell from 13.7 million minutes in 2003-04 to 11.4 million minutes in 2004-05, significantly better than the target of 12.3 million minutes set in ACR2003.

Network Rail needs to continue to work in partnership with train operators to deliver improved performance for the remainder of the control period to March 2009 and to achieve, and indeed exceed, the targets in ACR2003.

Public Performance Measure (PPM)

3.2   PPM combines punctuality at final destination and cancellations for franchised passenger train services. It excludes freight and it assesses punctuality by a simple pass/fail threshold of lateness at a train's destination. Network Rail now has an enhanced role in leading whole-industry performance improvement, so PPM is now a key measure of how it is performing, as well as how the passenger railway is delivering as a whole.

Figure 1: PPM by four-weekly periods, 2000-01 to 2004-05

PPM by 4-weekly period
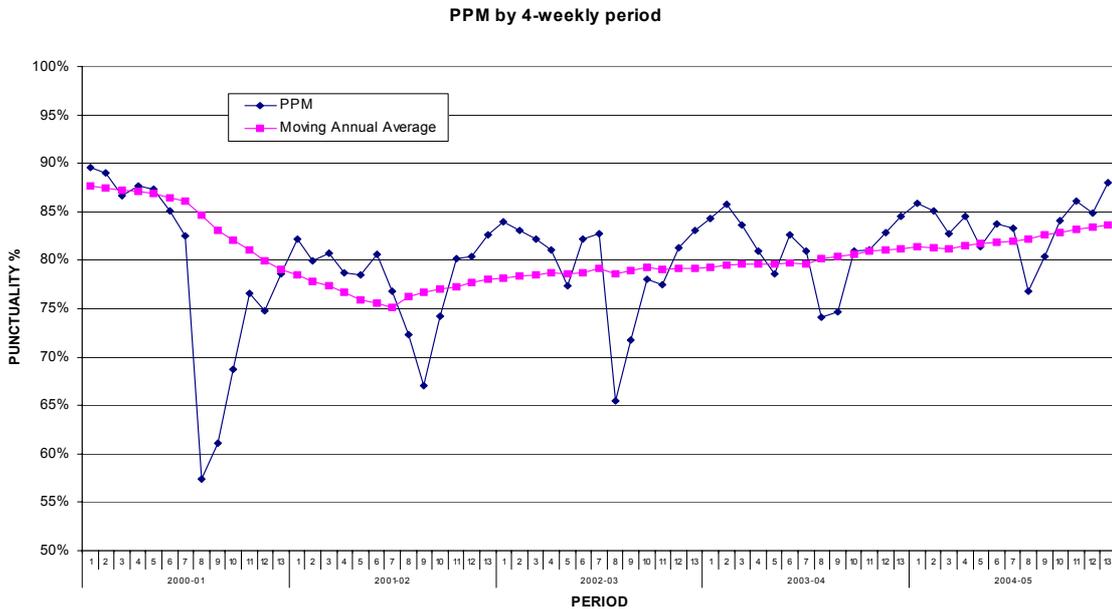
Source: Network Rail data

3.3 The rail industry is currently working towards achieving a PPM level of 85% by March 2006, expressed as a moving annual average (MAA). Progress towards this target has been gradual but sustained.

- At the end of 2004-05, the level achieved was 83.6%, compared to 81.2% at the end of 2003-04.

- This improvement is continuing. The latest figure for the level at end of the fifth four-week period of 2005-06 was 84.8%.

- There are wide variations in the PPM for individual train operators. Some achieving well over 90%, whilst others, sometimes with similar equipment and service patterns, are failing to achieve even 80%.

Delay minutes attributable to Network Rail

3.4 As Figures 2-5 below illustrate, the impact of Network Rail on train performance, and industry performance generally, has been gradually improving since the aftermath of the Hatfield derailment in 2000, when precautionary speed restrictions were imposed across the network.

- During 2004-05, the proportion of total delay to passenger trains attributable to Network Rail fell from 55% to 51%.

- The total delay attributable to Network Rail in 2004-05 was 11.4 million minutes, compared to 13.7 million minutes in 2003-04 (subject to any

final adjustment as a result of resolving disputed attribution). This is 7% better than the ACR2003 target set by ORR for the year of 12.3 million minutes.

- Network Rail's business plan target for 2005-06 is 10.6 million minutes delay to franchised passenger services and freight services, substantially better than the target in ACR2003.

- Train planning related delays increased by 150,000 minutes (30%) in 2004-05 compared to 2003-04. This occurred whilst Network Rail was reorganising its train planning function, and working to recover compliance with its obligations under the industry's arrangements for notifying changes to timetables for engineering work.

- Delays attributable to weather increased by 58,000 minutes (7%) in 2004-05 compared to 2003-04, largely due to a series of weather-related events in Scotland. However, autumn performance in 2004-05 continued a trend of improvement with 184,000 fewer delay minutes nationally than in the equivalent period in 2003-04, a reduction of 39%.

Figure 2: Delays to all services, by period, 2000-01 to 2004-05.
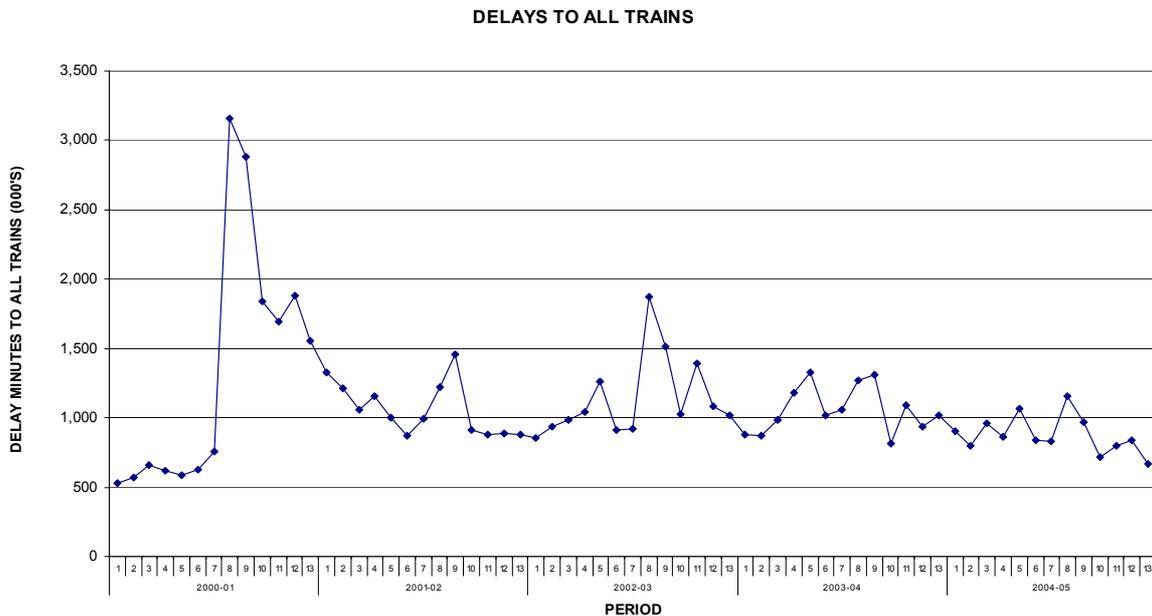
Source: Network Rail data

Figure 3: Delays to all services 1999-00 to 2004-05, and ACR2003 targets.
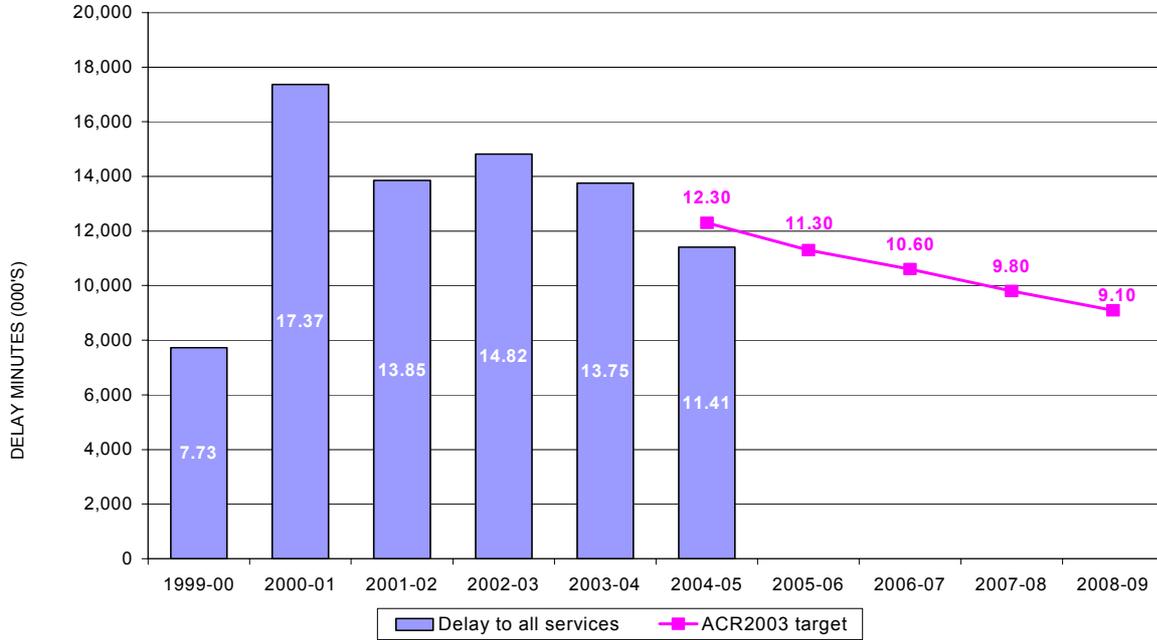
Source: Network Rail data and ACR2003

Figure 4: Annual delay per 100 train kilometres to franchised passenger services 1999-00 to 2004-05, and ACR2003 target

Source: Network Rail data and ACR2003

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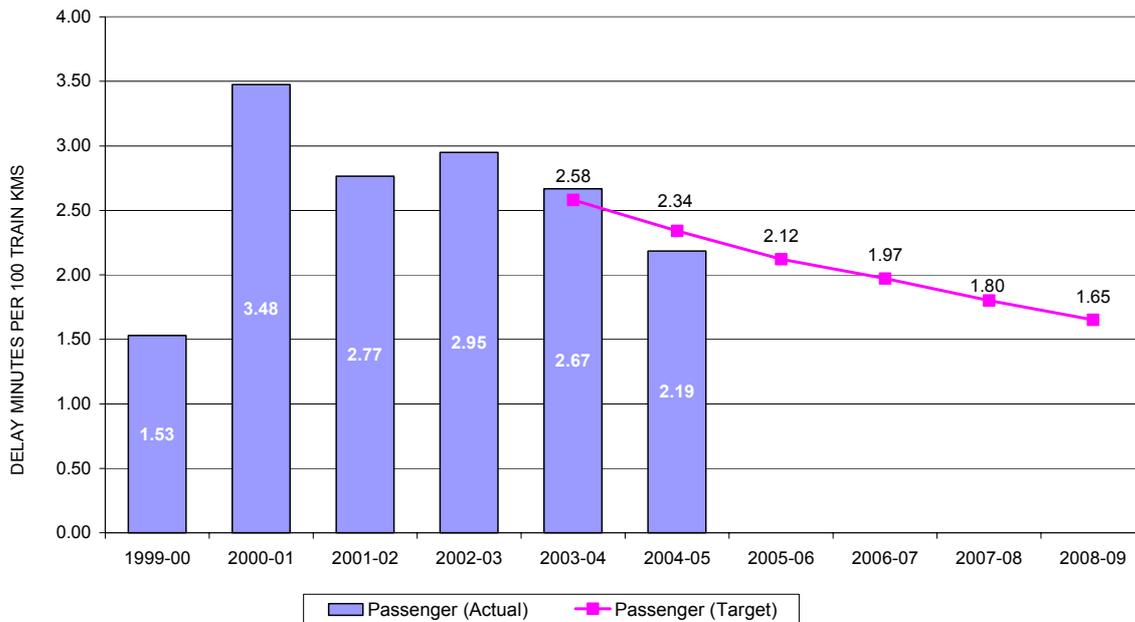
Figure 5: Annual delay per 100 train kilometres to freight services, 1999-00 to 2004-05
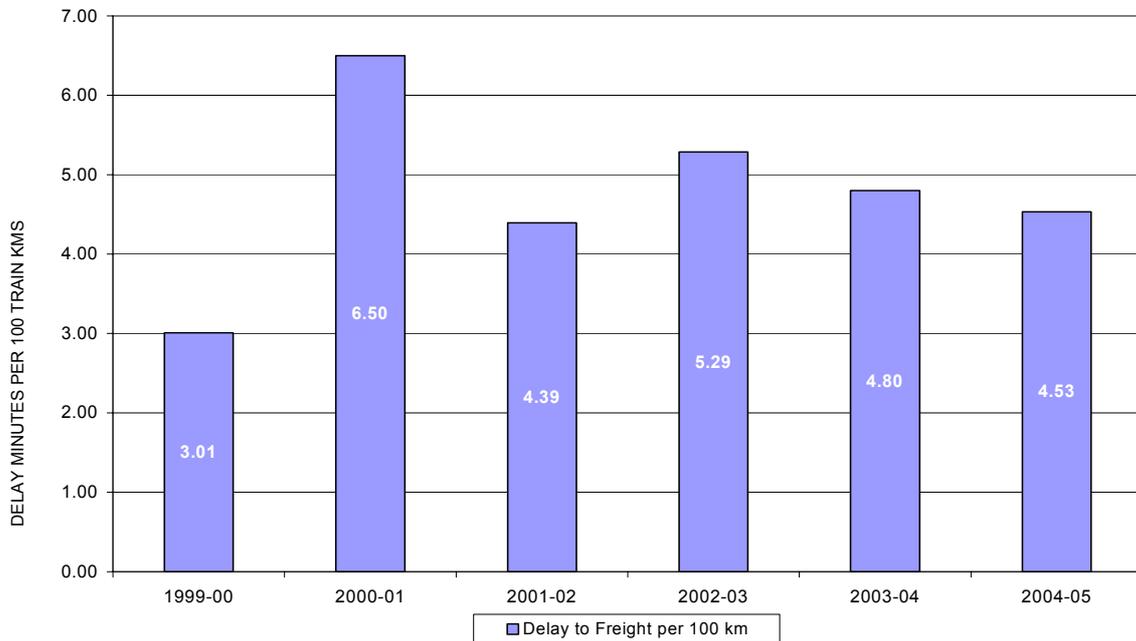
Source: Network Rail data

Timetable planning

> After failing to fulfil its network licence requirement to give sufficient advance warning of temporary changes to the timetable in 2003-04, Network Rail agreed a recovery plan with ORR. The company made substantial progress in meeting the milestones in the plan and is now generally meeting its obligations.

3.5   Condition 9 (Timetabling) of Network Rail's Network Licence requires the company to plan engineering works and to specify its requirements for temporary changes to the national timetable (other than changes arising from emergencies or severe weather conditions) in sufficient time for the timetable to be revised at least twelve weeks prior to the date of any such change (the T-12 requirement). Although Network Rail did not fully achieve some of the intermediate milestones in the recovery plan, it achieved the T-12 objective by the end date.

•   Network Rail took steps to introduce far greater discipline into the possession planning process, requiring late proposals for disruptive

possessions to be justified to, and signed-off at, a very high level within the company.

- The train planning function was reorganised into just three offices (Paddington, Birmingham and Leeds), reducing handover of services between offices and allowing economies of scale. However, problems arose because the company did not put sufficient staff in place. Following pressure from ORR, steps were taken to rectify the position.

- Network Rail introduced new train planning software (Trainplan) during the year. This facilitated the handover of trains between offices, and train operators can now view their timetable (or amended timetable) at any point in its development. Although earlier than expected, the changeover to Trainplan caused some problems in the run-up to Christmas 2004. These were subsequently rectified. The position was compounded by problems with the Association of Train Operating Companies' (ATOC) new reservation system. (These were outside Network Rail's control.)

- EU Directive 2001/14/EC required the main timetable change date of all EU member states to be aligned with effect from December 2003, with the change date falling on the Sunday following the second Saturday in December. The UK negotiated a derogation from this to December 2004. Network Rail stated in its Business Plan that it would move the main timetable change date to December 2004 in line with the Directive, and this was achieved.

Network capability

ORR has concerns over the quantification and documentation of baseline network capability and plans to use the independent reporter to review all aspects of the process once the new contract has been let in November 2005.

3.6 Under ACR2003, Network Rail is funded to maintain the capability of the network at the level which existed at 1 April 2001. The company is monitored against four measures:

- linespeed;

- loading gauge;

- route availability; and

- electrification.

3.7 Enhancements are generally subject to specific funding arrangements, while reductions are permitted through the Network Change process under Part G of the Network Code[8], generally where facilities have become redundant as a result of changing traffic patterns.

3.8 During the year, welcome enhancements to capability were made, including:

- Felixstowe to the West Coast main line (WCML) via the North London Line has been cleared for W10 gauge (9'6" x 2.5m containers on standard wagons); and

- WCML capability continues to be enhanced (for tilting trains), with linespeed increasing from 110 to 125 mph over many sections, and extension of existing W10 routes.

3.9 We commissioned the independent reporter's view of the extent to which the national structure-gauging database meets the needs of stakeholders. Issues identified included: lack of industry awareness of the database; information gaps and out-of-date information. Network Rail says that it is addressing these issues.

3.10 Successive Network Rail annual returns have tracked the four physical network capability measures listed above, by mileage. However, the amount of data correction in the underlying asset information systems continues to obscure trends. We have a number of concerns.

- The length of time it is taking to reconcile the year-on-year figures. If Network Rail has no accurate measures of network capability, it compromises its future plans and customers cannot have confidence that they can necessarily operate the services that they need to. ORR considers that Network Rail should have made greater progress in addressing this and been more proactive in publishing the information.

- We are aware of a number of concerns from freight operators over the (lack of) network capability where, for example, traffic may not have used the full capability of a line for some time, but when flows re-start some requests for access are refused. We are not convinced that all changes are identified, recorded and subject to timely industry consultation through the Network Change process.

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[8] The Network Code (formerly the Railtrack Track Access Conditions) is a common set of rules applying to all parties to regulated track access contracts with Network Rail and was first established when Railtrack took over operation of the rail network on 1 April 1994.

- A further specific criticism made by train operators, particularly the freight operating companies, is the lack of a target gauge with which to clear each route. In the absence of such a target, opportunities for the passive provision for enhancements may be being lost.

- The asset register plans show a decreasing consideration of capability, and we are concerned that Network Rail has not been giving this important aspect of its asset knowledge the prominence it deserves. We will be working with Network Rail in the coming year to ensure the data requirements relating to capability are clearly defined.

3.11 We have concerns over the extent to which Network Rail has complied with Conditions 7 and 24 of its Network Licence by demonstrably maintaining the capability of the network for which it was funded on 1 April 2001. Network Rail has produced a programme to address issues related to capability, which we will monitor closely. We plan to use the independent reporter to review all aspects of the process once the new reporter contract has been let in November 2005.

Possessions

> Engineering possessions are essential for infrastructure maintenance and renewal, and some disruption to timetabled services is inevitable. ORR believes that there is considerable scope for Network Rail to improve the efficiency with which it plans, manages and utilises its engineering access. Such improvements need to be given very high priority.

3.12 The capability of the network is subject to short-term variability as Network Rail takes engineering possessions[9] (many thousands each year) to carry out infrastructure maintenance and renewals. Inevitably, given the mixed use of much of the network and the extent of that use, many of these possessions cause considerable disruption to passenger and freight services, and the efficiency with which Network Rail plans and utilises engineering access is therefore of paramount importance.

3.13 ORR believes that the present pattern of engineering access is not as efficient as it should be. Consultancy studies undertaken as part of ACR2003 suggested that significant efficiencies could be achieved by making more

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[9] The arrangements under which the network operator temporarily restricts access to stretches of track to allow for engineering work is known as 'taking possession of the network'.

radical alterations to the current pattern of possessions than has been the case historically with a pattern of gradual evolution.

3.14   Network Rail has made moves towards implementing some changes to its possession strategy, but to date progress has been quite limited. While train operators are generally supportive of the principles of such a strategy, in practice there are widespread concerns about poor utilisation and low productivity within existing possessions. There is a need to understand more about the whole-industry benefits and costs of radical change to engineering possessions.

3.15   An immediate concern is that Network Rail does not yet have adequate measures for monitoring the planning, management and utilisation of engineering possessions.

3.16   As these issues were developed during the year, ORR's plans to undertake an interim review of additional efficiencies that may be generated by radically re-thinking engineering possessions were revised considerably. Following the consultation process we carried out earlier this year, the industry has now established a comprehensive review of all aspects of the planning and productivity of engineering possessions. It is intended that this work will establish a detailed understanding of all the benefits and costs of alternative engineering access strategies, and clearly define areas where engineering productivity needs to be improved, regardless of actual possession length.

Actions

3.17   We expect Network Rail to:

- Continue to provide industry leadership in working towards achieving and sustaining the current PPM target of 85%.

- Demonstrate that it is committed to improving the PPM figure for all passenger train operators, especially, where progress so far has been limited.

- Continue to develop sound and sustainable joint performance improvement planning with all train operators in order to continue to meet, or better, regulatory targets.

- Further improve the management of disruption on the network by working face-to-face with operators in integrated control rooms where appropriate.

- Ensure that staffing and competency levels in the reorganised train planning function are sustained in order to ensure:

  - more rapid progress in reducing the performance impact of train planning errors;

  - the firm control of possession planning; and

  - that other timetable development processes, such as Route Utilisation Strategies (RUSs), are also adequately resourced.

- Continue to look for ways to reduce the impact of bad weather on train services.

- Confirm that current network capability is correctly documented and published, developing additional capability measures where applicable as the asset register is developed, whilst ensuring that actual capability is brought back to the required standard (or processed as Network Change) where it currently falls short.

- Lead the development of a target-loading gauge for each route in conjunction with the Vehicle-Structures System Interface Committee (VSSIC) and through the RUS process.

- Cooperate fully with the industry in establishing a set of appropriate performance indicators for engineering possessions (including the disruption that they cause) whilst developing a more efficient engineering possession strategy that minimises the effects of possessions on passenger and freight services.

- Demonstrate improvements in current levels of engineering productivity before implementing any more radical or disruptive possession strategy.

3.18   We will:

- continue to work with the industry to revise Part L of the Network Code to formalise joint performance improvement plans (JPIPs).

- continue to monitor performance of both Network Rail and the operators and provide regular updates in the *Network Rail Monitor*, published on the ORR website.

- Use the independent reporter to review all aspects of the process of measuring network capability once the new reporter contract has been let in November 2005.

4. Infrastructure condition

4.1   Infrastructure condition is monitored using a range of measures appropriate to the different types of asset that make up the network infrastructure. This chapter analyses asset failure data and the consequential train delay impacts to assess the reliability of the infrastructure during 2004-05 and to provide an overall view of the current condition of the network. Additionally, we review progress with securing good asset information.

Asset reliability

Following a number of years in which the number of asset failures remained largely static, in 2004-05 Network Rail achieved significant reductions in the number of asset failures and the consequential impact on delay. Reported figures indicate that the infrastructure has not only performed more reliably in the year under review, but that it has also been managed more effectively.

Overview of infrastructure incidents

- Over the period 2001-04, over half of the delay minutes attributed to Network Rail were caused by infrastructure incidents. This was 53% in 2004-05.

- The number of infrastructure incidents attributed to Network Rail continues to fall. It fell by 10% from 65,036 in 2003-04 to 58,546 in 2004-05.

- The consequential total delay to train services of these failures was 6,044,488 minutes in 2004-05, representing a 23% reduction from 2003-04 figures.

- Of the delay attributable to Network Rail, the proportion caused by infrastructure incidents fell from 57% in 2003-04 to 53% in 2004-05.

- Average delay per incident was 15% lower in 2004-05 compared to 2003-04.

Table 1: Total number of infrastructure incidents, delay minutes and average delay per incident, 2002-03 to 2004-05

	Total infrastructure delay (minutes)			Number of incidents*			Average delay per incident** (minutes)		
Year	2002-03	2003-04	2004-05	2002-03	2003-04	2004-05	2002-03	2003-04	2004-05
Total	8,404,420	7,886,110	6,044,488	65,215	65,036	58,546	129	121	103

 * Source: 2005 Annual Return
** Source: Period 13 network condition report

Figure 6: Number of infrastructure incidents, 2002-03 to 2004-05
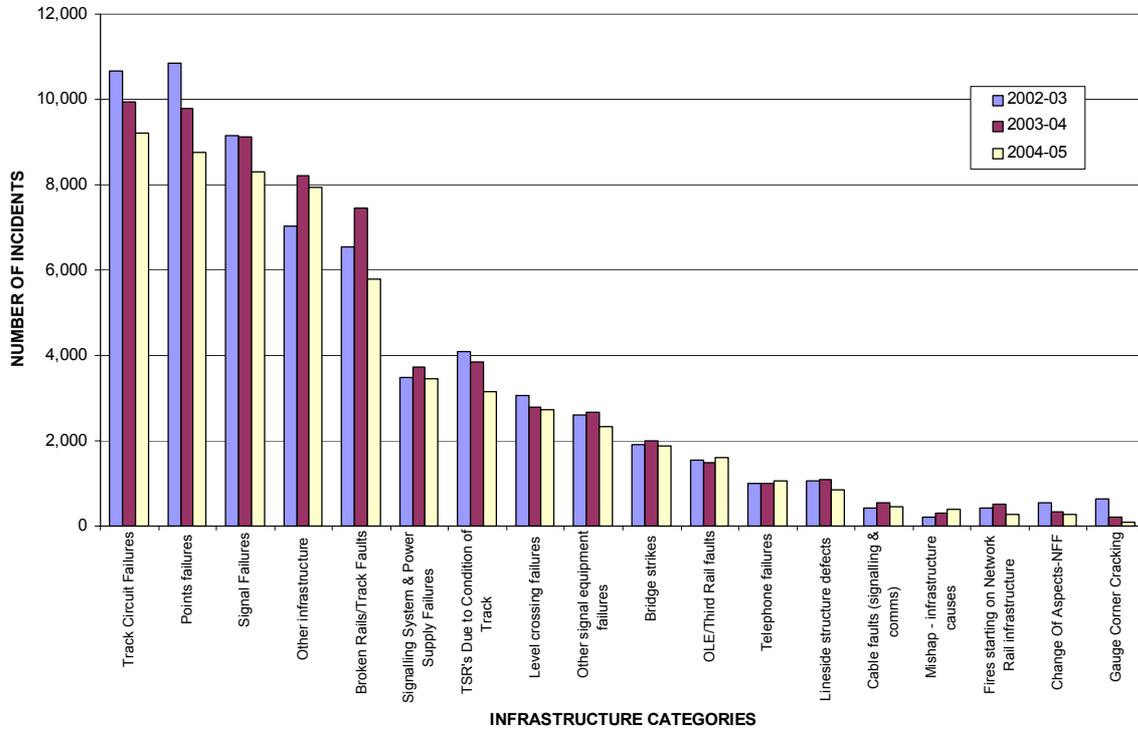
Source: Network Rail data

Figure 7: Delay attributable to Network Rail
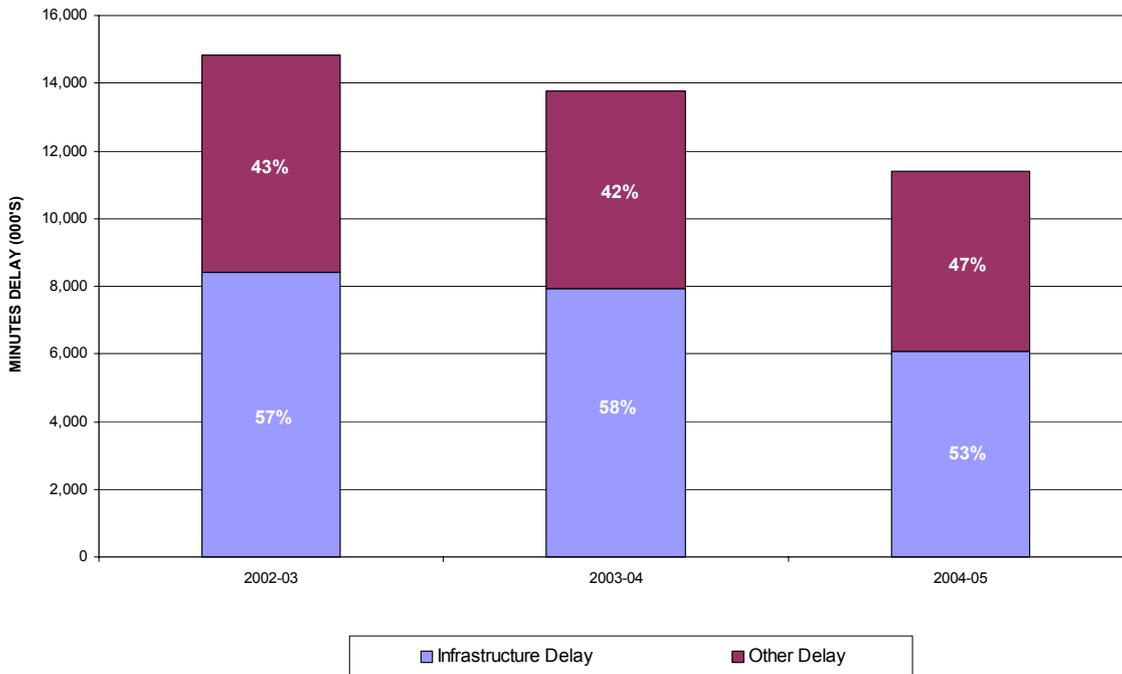
Source: Network Rail data

Figure 8: Average delay per infrastructure incident
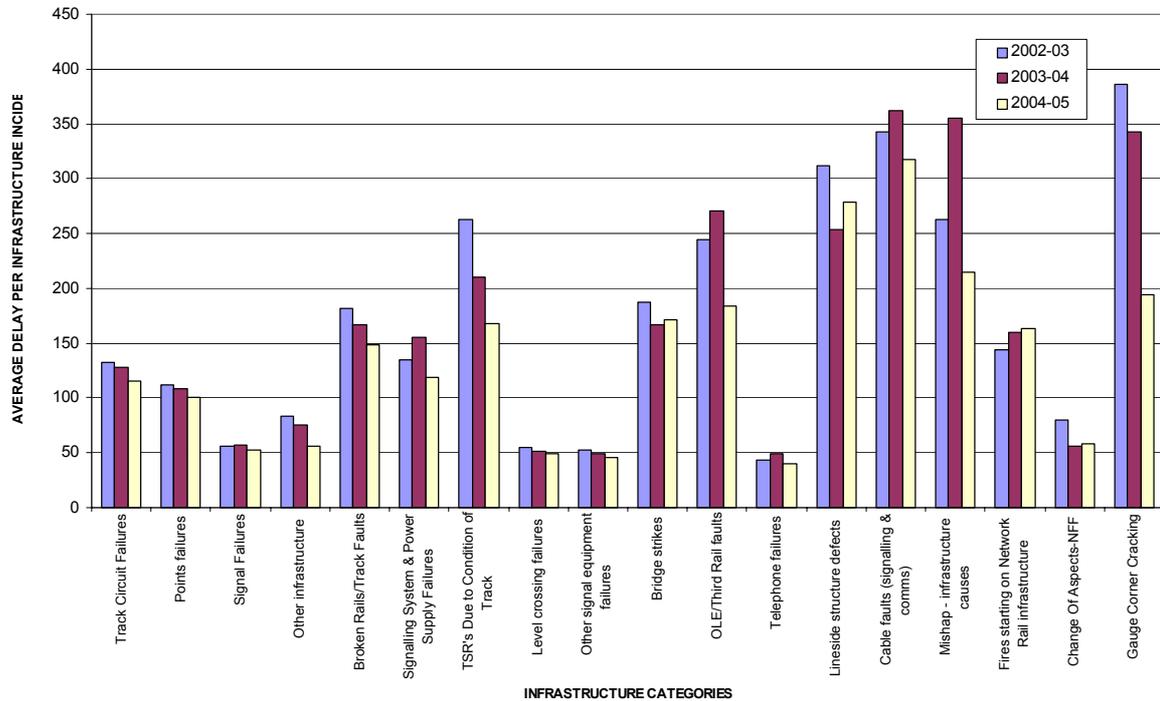
Source: Network Rail data

4.2   Table 2 shows the attribution of infrastructure delay minutes and the number of individual infrastructure incidents and failures in 2004-05 (in descending order of performance impact) compared to 2002-03 and 2003-04.   Of particular note:

- Train delay fell in every one of the 18 recorded categories.

- Four categories (track circuit failures, points failures, track faults and temporary speed restrictions (TSRs) due to the condition of the track) consistently contribute more than half of all infrastructure-caused delays. However, the total delay attributed to them fell by 1.1 million minutes between 2003-04 and 2004-05.

- This reflects a 17% fall in track circuit and points failure delays, and even more significant falls in delays caused by track faults and track condition speed restrictions. Both categories fell by one-third in a single year.

- There were 9% fewer failures and 21% fewer delay minutes caused by power supply, distribution and lineside equipment problems in 2004-05.

Table 2: Total infrastructure delay (minutes) and number of infrastructure incidents, 2002-03 to 2004-05

	Total infrastructure delay (minutes)			Number of incidents*		
	2002-03	2003-04	2004-05	2002-03	2003-04	2004-05
Track circuit failures	1,418,682	1,269,960	1,058,772	10,668	9,935	9,226
Points failures	1,206,543	1,065,887	882,872	10,844	9,802	8,769
Track faults (inc broken rails)	1,178,882	1,244,069	849,711	6,545	7,450	5,774
TSRs due to condition of track	1,085,208	809,947	530,427	4,078	3,860	3,158
Other infrastructure failures	582,746	610,463	441,227	7,027	8,219	7,951
Signal failures	509,725	510,991	434,036	9,160	9,119	8,300
Signalling system/Power supply failures	482,853	572,099	410,155	3,494	3,719	3,448
Bridge strikes	357,427	335,176	324,015	1,912	2,009	1,888
OLE/third rail faults	350,894	395,062	292,970	1,547	1,475	1,601
Lineside structure defects	332,341	274,968	234,619	1,067	1,090	841
Cable faults (signalling and telecoms)	146,318	193,616	141,302	423	535	445
Level crossing failures	168,363	142,037	134,181	3,050	2,794	2,725
Other [explain] signal equipment failures	133,160	130,046	106,218	2,591	2,653	2,337
Mishap – infrastructure causes	53,061	107,970	80,707	203	308	369
Fires starting on NR infrastructure	60,911	81,642	45,887	424	513	282
Telephone failures	44,014	48,806	42,513	1,008	994	1,060
Rolling contact fatigue	250,750	74,378	19,046	640	219	98
Change of signal aspect – no-fault found	42,542	18,993	15,830	534	342	274
Total	8,404,420	7,886,110	6,044,488	65,215	65,036	58,546

* Source 2005 Annual Return

Source: Network Rail data and annual returns

4.3   These positive trends indicate a sustained and widespread improvement in the reliability and underlying condition of the infrastructure in 2004-05, while the reduction in delay per incident suggests improvements in the effectiveness of Network Rail's asset management through a faster and more effective engineering response to infrastructure incidents. Early figures for 2005-06 suggest that sustaining this rate of improvement is a challenging task for Network Rail.

Asset quality

The Asset Stewardship Index continues to outperform the ORR targets set in ACR2003 and Network Rail's internal targets. The overall figure for the year was 16% better than the company's own target. Taken together with asset reliability data this indicates that there has been substantial improvement in the overall condition of all types of infrastructure asset.

4.4   The Asset Stewardship Index (ASI) measure is a composite index that was introduced in the ACR2003. It includes weighted elements of the principal asset categories as shown in table 3, and is calculated so that the combination of each target for the end of the control period in 2008-09 gives an overall ASI target of 1.0.

Table 3: Component measures and weighting of the ASI

Asset category	Asset measure	Weighting	2004-05 actual*	2008-09 target level
Track	Track geometry	20%	0.9	1.0
	Broken rails	15%	322	300
	Level 2 exceedences	15%	0.9	0.9
Signalling	Points/track circuit failures	10%	17,995	19,360
Signalling	Signalling failures	20%	24,950	28,750
Electrification	Electrification failures	10%	87	133
Structures and Earthworks	Structures and Earthworks related TSRs	10%	75	100

* the target is being met where the level achieved is lower than the actual target

Source: ACR2003 and Network Rail data

Table 4: Asset Stewardship Index

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Year end ASI	1.20	1.09	0.90				
Network Rail target			1.06	0.85	n/av	n/av	
ACR2003 target							1.0

Source: 2005 Annual Return and ACR2003

4.5   Table 4 above shows that the ASI is outperforming ACR2003 incentive targets. The overall figure of 0.9 for 2004-05 is 16% better than Network Rail's internal target and is already ahead of the ACR2003 target for 2008-09. All asset categories have contributed to this overall improvement, and table 3 shows that all but the broken rail measure (which still remains on a downward trend) are already at, or ahead of, the relevant 2008-09 target.

4.6   Track

- At a national level, all measures of track condition and reliability confirm that Network Rail made tangible progress in managing its track assets during 2004-05.

- Track faults - 22% fewer incidents were recorded, with 32% less delay.

- Condition of track TSRs - 18% fewer recorded incidents, with 35% less delay.

- Rolling contact fatigue - 55% fewer recorded incidents, with 74% less delay.

4.7   These improvements point to a combination of positive trends.

- Better underlying track quality.

- Better asset management linked with bringing maintenance in-house and improved prioritisation of interventions, e.g. TSR management.

- The continuing implementation of new inspection and maintenance equipment, e.g. the better detection of rail defects and an increasingly effective rail grinding programme.

4.8   Track geometry

- All of the track geometry measures show that track quality improved in 2004-05, sustaining the improving trend of recent years. Indeed, they are now at the best recorded level since *at least* 1994.

- Standard deviation measures are now generally meeting ACR2003 targets, and in some cases they are substantially ahead of target.

- The percentage of the network with poor track geometry that does not comply with Network Rail's standards has been reduced from 3.85% to 3.09%.

- There has been a substantial reduction in the number of Level 2 exceedences. For the network as a whole in 2004-05 the figure fell to 0.91 per track mile, just half the value that was recorded in 2000-01. Improvements can be seen on all operating routes.

4.9   Rail management

- Table 5 and Figure 9 show that the year-end figure for broken rails fell for the sixth year in succession to a total of 322, which is a new all-time low. However, the reduction of 12 from 334 in 2003-04 suggests that the more dramatic reductions in previous years have now been consolidated within a much improved rail maintenance regime.

- Significant further reductions are less likely in the future. However, a further reduction is still required during 2005-06 in order to meet the ACR2003 target of 300 or below per year.

- For the fourth year running, substantial corrections to rail defect data were necessary at the start of 2004-05. Network Rail is in the process of improving rail defect reporting and data storage systems, and we expect this to include a detailed review of the causes of the corrections to ensure that overall accuracy is greatly improved for next year.

Table 5: Number of broken rails, 1999-00 to 2004-05 and regulatory target

	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Number of broken rails	919	706	536	444	334	322				
ACR 2003 target						No target	No more than 300 per annum			

Source: 2005 Annual Return, Network Condition Reports and ACR2003.

Figure 9: Number of broken rails and ACR2003 target level
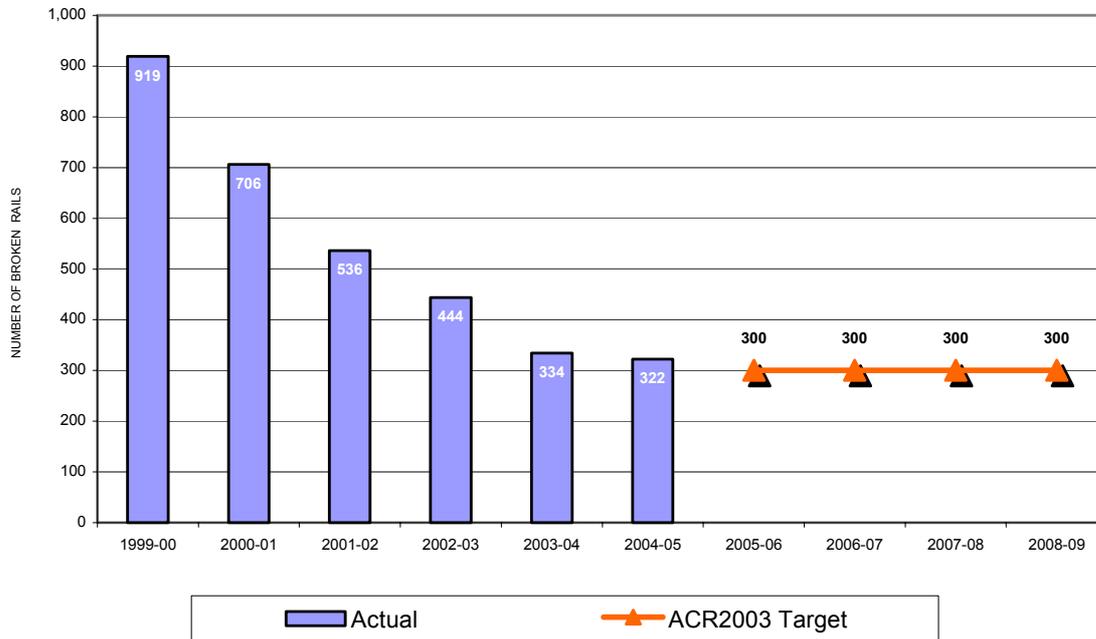
Source: 2005 Annual Return, Network Condition Reports and ACR2003.

4.10 Temporary Speed Restrictions (TSRs)

- The majority of current TSRs are required because asset condition has fallen below the standard required for the existing route speed and traffic type. However, Network Rail achieved a substantial reduction in the overall number of TSRs in 2004-05 and achieved more substantial reductions in the train delay minutes caused by them.

- Table 2 shows an 18% reduction in all incidents of condition of track TSRs, with a 35% reduction in resulting train delays.

- Table 6 shows the reduction in long-term TSRs (i.e. those in place for more than four weeks).

- Table 7 and Figure 10 show the trends in numbers of TSRs on the network. Table 7 reflects changes in Network Rail's reporting from period 7 of 2004-05, such that only aggregate figures have been made available since that time. While Table 7 appears to show that the number of TSRs has risen slightly from the end of 2003-04, Figure 10 suggests that the number in period 13 was well below the prevailing level of TSRs at that time. We have investigated this with Network Rail. We considers that Figure 10 actually does demonstrate a gradual reduction in the overall number of TSRs in place at each period end in the latter half of 2004-05.

Table 6: Total and average number of TSRs and corresponding severity scores

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Total TSR sites (in place for four weeks or longer)	1,532	1,308	1,199	942				
Severity score*	8,029	6,169	6,089	4,622				
ACR2003 target				Annual reductions in the number of TSRs				

* The total severity score is the sum of the individual severity scores of all temporary speed restrictions. It is a measure of train service impact because each score is calculated from linear length, length of time and speed reduction imposed.

Source: 2003 and 2005 Annual Returns and ACR2003.

Table 7: Number of TSRs in place at the end of the year, by cause

	2000-01	2001-02	2002-03	2003-04	2004-05*
Condition of track	463	370	355	325	n/av
Rolling contact fatigue	256	62	15	5	n/av
Work in progress	62	85	63	53	n/av
Other	127	139	104	74	n/av
Total	908	656	537	457	470

* See paragraph 4.10 for an explanation on non-available figures

Source: Network Rail's Network Condition Reports

Figure 10: Number of TSRs on the network by category (at the end of the 4 week reporting period), 2000-01 to 2004-05
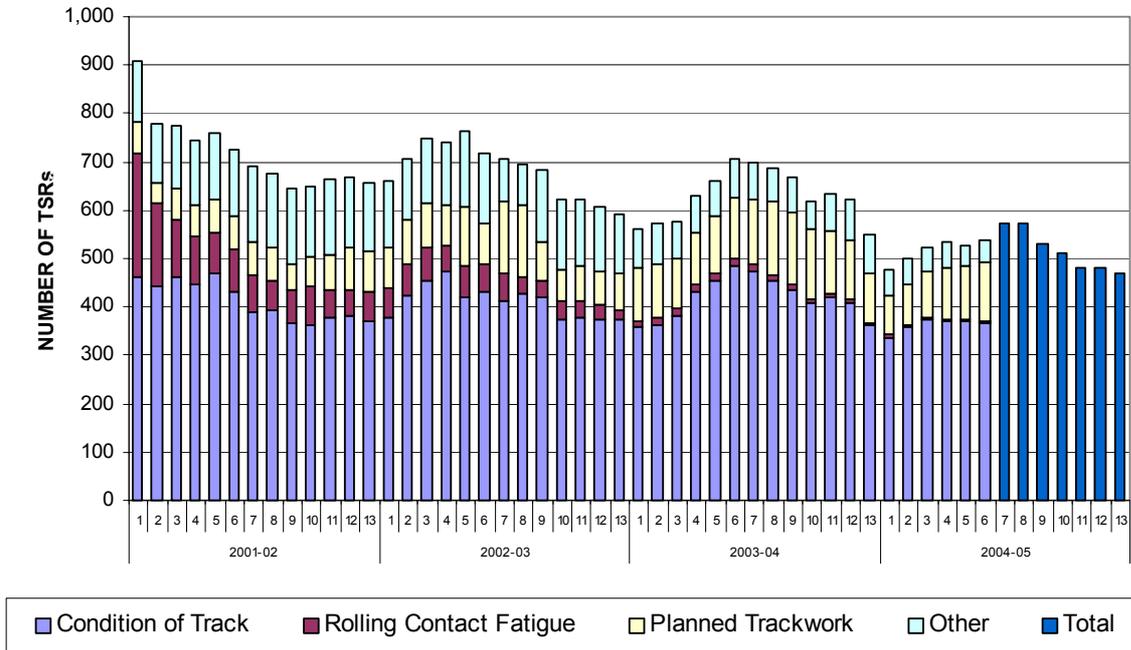
Source: Network Rail data

4.11 Signalling

- Signalling is a complex system and there is no single measure that provides a high level summary of the condition of the signalling system. We therefore consider the number of signalling failures as an indication of the serviceability and reliability of the asset, and the assessed condition of signalling interlockings, as an indication of the overall residual life of the equipment.

- ORR monitors two types of signalling failure data: the number of failures causing delay of more than 10 minutes and the total minutes of delay collected by Network Rail's delay attribution system.

- Table 2 shows how Network Rail's delay attribution system records all signalling system delays by cause. Excluding track circuit and points failures (which can be caused by track problems as well as faults with the signalling equipment), other signal failures, system faults (including power supply) and level crossing failures are responsible for approximately 20% of all train service delays. The total of all such delays in 2004-05 fell by 21% compared with 2003-04, and there were 9% fewer incidents of failure.

- Table 8 shows that in 2004-05 the overall reliability of signalling equipment improved, with 11% fewer incidents compared with 2003-04.

- The consideration of signalling asset condition based upon existing residual life assessments is not straightforward as the data is neither complete nor totally consistent. A number of variants of Network Rail's Signalling Infrastructure Condition Assessment (SICA) tool have been used to assess residual life, and not all signalling interlocking areas have been assessed. However, ORR considers that the information generated by SICA is sufficient to indicate general trends in asset condition and this is shown in table 9.

- The average condition grade has not changed from last year, and therefore meets the ACR2003 condition grade target. However, there is a clear declining trend over recent years.

- The reliability of signalling equipment in 2004-05 has been achieved against a background of steadily ageing equipment.

- As equipment gets older and more obsolete, it will become increasingly difficult to maintain reliability and serviceability improvements. The conclusions of the signalling review in respect of future levels of signalling renewals are therefore extremely important if signalling performance is to improve in the future.

Table 8: Number of signalling failures resulting in total train delay of more than ten minutes, 2000-01 to 2004-05

Signalling failures	2000-01	2001-02	2002-03	2003-04	2004-05	2004-09
Causing delay of more than 10 minutes	25,106	27,905	29,013	28,098	24,950	
ACR2003 serviceability target	n/app	n/app	n/app	n/app	No deterioration from 2003-04 network level (28,098)	

Source: Network Rail's 2005 Annual Return and ACR2003

Table 9: Signalling condition

Condition grade*	Observed nominal residual life (years)	Cumulative total and % of interlocking areas in condition band				
		2000-01	2000-02	2000-03	2000-04	2000-05
1	>20	0	31 (3%)	15 (1%)	0	5 (0.3%)
2	10-20	441 (70%)	671 (64%)	655 (64%)	736 (53%)	782 (52%)
3	3-10	162 (26%)	262 (25%)	295 (29%)	559 (40%)	626 (41%)
4	<3	27 (4%)	79 (8%)	67 (6%)	98 (7%)	97 (6%)
5	At end of life	0	0	0	0	0
	Total assessed	630	1,043	1,032	1,393	1,510
	Average condition grade	2.3	2.4	2.4	2.5	2.5

 * Although precise definitions will vary from one asset type to another, condition measures are assessed against a scale of 1-5, where 1 represents very good, or as new, and 5 represents end of useful life.

Source: Network Rail's 2005 Annual Return

4.12   Telecommunications

- In 2004-05, there was a slight increase in reported telephone failures compared to 2003-04. The number of reported cable faults (which apply to signalling and telecommunications equipment) fell, causing less train delay than in 2003-04.

- There has not been the same reporting requirement of Network Rail for telecommunication assets as exists for other asset types. This is because much of the existing equipment is due to be replaced by the Global System for Mobile telecommunications – Railway (GSM-R) project, or is already being replaced by extensive renewals of the fixed telephone network.

4.13   Structures

- Structures comprise the long-life civil engineering assets of bridges, culverts, tunnels, retaining walls and earth structures. Many of these date from the original construction of the railway and carry traffic volumes and loads far above the original design intent. Thorough inspection and appraisal regimes are therefore necessary for adequate

- and timely maintenance and renewal interventions, to ensure no overall deterioration of the network.

- The condition of bridges is reported in Network Rail's annual returns. Bridges are assessed against a scale of 1 to 5, where 1 is very good, or as new, and 5 represents poor condition. The grades are related to the results of a detailed bridge inspection where a structures condition marking index (SCMI) score from 1 to 100 is allocated. Table 10 shows that the grade for 2004-05 was 2.1 with a cumulative average for 2001-05 of 2.0. Both figures are identical to those for 2003-04.

- The independent reporter found a wide variation in both progress and correlation of SCMI scores within individual territories

- Network Rail's company standards require a detailed condition survey of each bridge at a normal interval of six years. Network Rail inspected 5,004 bridges in 2004-05 and the total inspected is now 15,312 over a period of five years. However, progress remains behind schedule.

- Network Rail expects to complete an SCMI inspection of all accessible bridges by the end of 2007-08. It is acknowledged that not all bridges (approximately 40,000 in total) may be inspected due to lack of access or visibility in a number of tenanted arches. Network Rail is reviewing the effective number that can be inspected and considering whether a generic approach for some tenanted arches may be appropriate.

- Notwithstanding the above, we consider that a sufficient number of bridges have been surveyed to determine a benchmark. The independent reporter has been commissioned to determine whether an effective and appropriate benchmark can be established and report in October 2005.

Table 10: Bridge condition index

	2000-01	2001-02	2002-03	2003-04	2004-05	2000-01 to 2004-05 overall
Average condition grade (out of 5)	2.1	2.0	2.0	2.1	2.1	2.0
Total number of bridges assessed	1,015	1,421	4,255	3,718	5,004	15,312

Source: Network Rail's 2005 Annual Return

- Network Rail reported that 54 embankment or cutting sites became unstable in 2004-05, one of which led to a derailment. This is seven

more than in 2003-04, principally in the London North West (LNW) Route (39% of the total occurred in this area) and reportedly due to high local rainfall in January 2005.

- There were 37 sites where a TSR was imposed due to poor earthwork condition, a reduction from the total of 85 sites in 2003-04. This reduction reflects continued remedial work to sites in poor condition, improved asset knowledge, and in some areas (e.g. Western) more favourable winter weather.

- As with the signalling assets, ORR currently monitors two versions of failure data for electrification equipment. The annual return reports the total number of incidents that caused train delays totalling 500 minutes or more.

- Table 11 reports on these major incidents and shows that in 2004-05 the overall reliability of electrification equipment improved, with 87 major traction power supply failures compared with 112 in the previous year, a 22% reduction. Most of this reduction was achieved on the 3rd rail DC system. Whilst there was some improvement on the 25 kV overhead network, it was much less marked.

- Table 2 shows how Network Rail's delay attribution system records all electrification failures, as opposed to the major incidents discussed above. In this case the degree of improvement is not so clear. Although the total amount of delay has reduced by 26%, the actual number of incidents recorded has actually gone *up* by 9. We are investigating the causes of this with Network Rail.

Table 11: Traction power supply incidents causing over 500 minutes delay

	2000-01	2001-02	2002-03	2003-04	2004-05	ACR2003 Target
AC System (OLE*)	88	107	102	79	71	88
DC System (3rd rail)	45	30	32	33	13	45
Total	**133**	**137**	**134**	**112**	**84**	**133**

* OLE – overhead line equipment

Source: Network Rail's 2005 Annual Return

Stations and depots

In last year's statement we said that the existing measures of station condition and station facilities could be improved to provide a better measure of the effectiveness with which Network Rail is delivering its stewardship obligations. Network Rail has not progressed the action plan to reform the station condition index and did not put an improved system in place in 2004-05. We expect this to be dealt with as a matter of urgency in 2005-06.

Network Rail has not yet proposed a baseline average condition grade for depots for ORR approval. . We expect Network Rail to make an explicit commitment to completing and reporting the condition of all its depots by the end of 2006-07.

4.14   Stations

- The regulatory target in relation to station condition is to maintain the average condition grade at 2.25[10].

- The reported condition grade for the complete portfolio of stations improved from 2.25 in 2003-04 to 2.23 in 2004-05.

- Network Rail attributes the improvement to a number of planned asset renewal projects and work carried out on dilapidations by the train operators prior to re-franchising. Table 12 shows the distribution of stations between the condition grades.

- There is no regulatory target for the index of station facilities. Network Rail reported that the index of station facilities increased from 104.8 in 2003-04 to 105.7 in 2004-05, against a base of 100 for 2000-01. The score is calculated by counting the number of specific items at each station, which are then grouped into 'themes'.

- Network Rail has indicated that the themes contributing most to the improvement in the index are information and communication (e.g. customer information systems), and safety and security (e.g. lighting and CCTV).

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[10]   Although precise definitions will vary from one asset type to another, condition measures are an average of the score from 34 elements of a station currently assessed against a scale of 1 to 5, where 1 represents very good, or as installed, and 5 represents end of useful life, or no longer serviceable. The overall condition rating is the average of all station scores.

Table 12: Number of stations per condition grade and overall condition score

Condition grade	2000-01	2001-02	2002-03	2003-04	2004-05
Grade 1	112	125	123	105	151
Grade 2	1,756	1,769	1,773	1,815	1,766
Grade 3	532	555	594	572	582
Grade 4	9	9	9	8	6
Grade 5	0	0	0	0	0
Total	2,409	2,458	2,499	2,500	2505
Overall grade	2.2	2.25	2.25	2.25	2.23

Source: Network Rail's 2005 Annual Return

4.15   Depots

- The regulatory target for the condition of light maintenance depots (LMDs) is for no deterioration from a baseline condition. Network Rail has not yet proposed a baseline average condition grade for ORR approval. In the absence of a baseline, the independent reporter used an average condition grade of 3.1 as the reference position in the 2004 audit report and recommended the issue of the regulatory target be resolved.

- Network Rail reported an average condition grade of 2.7 for 2004-05, which, due to continuing problems with hand-held data recorders, was based upon earlier surveys rather than inaccessible data from the 17 depots it surveyed in the year.

- Network Rail's failure to produce an updated average condition grade based on surveys carried out in 2004-5 means that the company has not fulfilled its regulatory requirements in this area. Network Rail should therefore make an explicit commitment to completing and reporting the condition of all its depots by the end of 2006-07 and ensure that this commitment is met.

- Network Rail has continued to deal with asbestos and land contamination remediation at its depots. The company was funded under ACR2003 to carry out remediation works estimated to cost in the region of £100 million to comply with the Oil Storage and Groundwater regulations[11]. A programme of priority works at fuel-dispensing depots was completed by the deadline for compliance of 1 September 2005.

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11   The Control of Pollution (Oil Storage) (England) Regulations 2001 and the Groundwater Regulations 1998.

Asset knowledge

There has been some slippage in this important area of work. However, Network Rail has been working to strengthen the application of asset information to its business planning processes, and has now committed itself to a revised asset information strategy. ORR will monitor delivery of this against detailed delivery milestones.

4.16　Network Rail's assets are diverse in nature and the total number is very large. Information on those assets, including condition and capability, is required both for the efficient operation, maintenance and renewal of the rail network and for the provision of information to third parties who rely on that knowledge. Network Rail recognises that developing good asset knowledge is an essential key to good asset management and, that in turn, good asset management is a core business requirement.

Progress in 2004-05

- In compliance with the asset register guidelines, Network Rail submitted development plans in April 2004. These concentrated on the development of IT systems and the improvement of existing asset information. We recognised that the guidelines for the development of the asset register needed substantial amendment to provide a means of monitoring progress towards completion.

- Network Rail submitted further plans in October 2004, revealing substantial slippage and little progress on implementation. Consequently, Network Rail proposed substantial changes to its approach to the reporting of the delivery of its asset information strategy. Although delays in completing the asset information system were envisaged, the end result should provide a much better business-led approach, both for the short-term operation and maintenance of the network and also for long-term planning of renewals and enhancements. The April 2005 plans reflected the change in direction and the guidelines are currently being revised to reflect clear target dates for completing the various elements of the strategy.

4.17　A number of projects were substantially completed during the year.

- *Engineering support centre*. This centre at Derby will be responsible for processing large amounts of real-time condition data on track and overhead line equipment generated by the new measurement train.

- *New measurement train*. This train, converted from a high speed train (HST), travels all tracks on the high-speed network at regular intervals and records track geometry and rail faults.

- *Information management (IM) projects.* Initiatives such as the External Services Gateway, the foundation stages of the Corporate Network Model and the hub were completed and are now being rolled out as part of the strategy to provide access to information.

- *Property management.* The Railway Estates department at Network Rail invested in a system called Atrium to record the condition of the stations and line-side buildings and implemented a series of survey contracts to populate the system. The system is currently being populated with conditions surveys.

- *GEOGIS data improvement project.* Network Rail completed a two-year project to improve the quality and completeness of information that identifies the location of every switch and crossing on the network. This information is an important component for the development of a corporate network model that will provide a visual tool with many planning and development applications.

Reporter Activities 2004-05

4.18   The independent reporter investigated a number of areas relating to the asset register.

- *Raildata.* An audit took place of a database that consolidates rail defects from legacy systems across the network. A number of errors and duplications were found and Network Rail plans to replace this with a more comprehensive defects management system.

- *GEOGIS trackwalk methodology.* Development and field trials took place for gathering track data that cannot be obtained from other sources.

- *Review of structure gauging database.* Consultation took place with Network Rail and outside parties on fit for purpose aspects of the national structure gauging database.

- *NETRAFF track categorisation.* The quality of data in NETRAFF, the system used to allocate track maintenance according to usage, was audited. Some significant gaps were found and Network Rail is addressing these.

Actions

4.19   Generally, ORR expects Network Rail to sustain the improvements in asset performance and condition so as to contribute to continuing reductions in train delays. We expect the company to:

- Continuing to focus on detail and good engineering practice in delivering infrastructure maintenance and renewal activities.

- Facilitate this by building upon the good foundations that have been laid for developing staff competencies and training, thus developing the overall experience of the workforce.

- In consultation with its customers, identify and resolve any specific problems or local issues where network capability, performance and asset condition are at variance with national trends and do not meet reasonable expectations and/or targets that define what current funding of the network is intended to achieve.

4.20   Specifically, ORR expects Network Rail to:

- Continue with the development and implementation of its asset information strategy, to meet individual programme milestones for component elements of the whole and to update and maintain the systems, demonstrating how it is complying with its licence obligations and achieving long-term improvement in its asset management processes.

- Continue to improve its knowledge of the condition of specific asset types where this information is key to effective asset management and needs further improvement (for example, through data quality improvement, extending currently incomplete data or ensuring that inspection schedules are met) e.g. signalling interlockings, electrification power supply and distribution equipment, structural inspections, rail defect data.

- In respect of stations, urgently implement a system to reform the station condition index in 2005-06, and in respect of depots make an explicit commitment to complete the assessment of, and report on, the condition of all its depots by 31 March 2007.

- Improve its knowledge of the links between asset usage, maintenance and renewal input activities and the resulting outcomes in terms of network performance, reliability and condition.

- Improve its knowledge of network capability in order to support Route Utilisation Strategies and the effective management of its assets.

- Continue to build upon improvements in the management of temporary speed restrictions, reducing further the number of TSRs without ever compromising safety.

4.21 ORR will:

- Continue to monitor asset condition and performance through receipt and scrutiny of Network Rail's regular asset condition reports, and produce quarterly reports of progress through 2005-06.

- Identify areas where further investigation appears necessary, and through our regular liaison meetings with Network Rail undertake such asset-specific casework.

- We will continue to investigate how Network Rail uses information about condition of track TSRs to optimise its asset management decisions.

- Continue to investigate how Network Rail uses asset information to forecast long-term activity and expenditure requirements.

- Undertake an assessment of Network Rail's existing asset management processes and practices in the light of recognised good practice.

- In consultation with Network Rail and industry stakeholders, we will approve suitable revisions to the asset register guidelines to reflect clear target dates for completing the various elements of its asset information strategy, and we will continue to monitor Network Rail's progress in delivering its strategy.

5. Activity volumes

5.1   Renewal activity on the network is measured by volumes of work undertaken on an annual basis for the various asset categories.   There have been significant and essential increases in renewal activity in recent years, and this chapter assesses achievement in 2004-05 in this context. However, year on year comparisons are not necessarily appropriate for all asset types, particularly the longer life assets such as bridges and tunnels.   Improved maintenance regimes can also affect the timing of renewals required and renewals activities may be deferred to ensure that benefits of efficient delivery can be maximised. This can be achieved for example by combining renewal of asset components under a single possession.

> There have been significant and essential increases in renewal activity in recent years. However, whilst renewal of track and structures assets is at a satisfactory level for the purposes of maintaining the condition of the network, this is not the case for signalling renewals, where activity has been below both planned levels and the level required to maintain the average age of the asset. Signalling renewals are addressed separately in the ORR Signalling Review.

Track renewals

5.2   Table 13 shows that the increasing trend of renewals from 2000-01 peaked in 2003-04, with a levelling or reduction in plain line renewals but an increase in switch and crossing renewals during 2004-05.   This is in line with the ACR2003 determination.

- Track renewals volumes were marginally below Network Rail's planned volumes for the year, as shown below. However, ORR does not consider that these minor shortfalls will have a detrimental effect on the network when considered in the context of the improved maintenance regime that now exists and the fact that switch and crossing renewals are still at higher levels than in recent years, even though slightly below plan.

- Rail renewed was 7% less than planned.

- Sleeper renewals were 4% less than planned.

- Ballast renewals were 1% less than planned.

- Switches and crossings renewed were 5% less than planned.

Table 13: Track and signalling renewal volumes 2000-01 to 2004-05

Renewal Activity	2000-01		2001-02		2002-03		2003-04*		2004-05	
	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast	Actual
Rail renewal	N/A	1,064 km	790 km	983 km	1,142 km	1,010 km	1,198 km	1,125 km	874 km	816 km
Sleeper renewal (all types)	N/A	475 km	557 km	636 km	625 km	666 km	849 km	782 km	695 km	670 km
Ballast renewal (all types)	N/A	496 km	648 km	624 km	775 km	665 km	985 km	812 km	690 km	685 km
Switches and crossings	N/A	N/A	N/A	136 units	297 units	254 units	393 units	373 units	539 units	511 units
Signalling (signalling equivalent units)	N/A	1,338 km	N/A	1,440	N/A	810	N/A	742	N/A	1,635

* Actual figures from 2003-04 annual return adjusted to exclude maintenance volumes

Source: Network Rail's annual returns. Forecast figures are from Network Rail's business plans.

Signalling renewals

5.3 Table 13 shows that the rate of renewal has improved from previous years when residual life was declining, although Network Rail continues to underspend. Complete area re-signalling forms only a small part of the activities undertaken, with the majority being life-extension works involving the replacement of internal equipment only. The volume achieved in 2004-05 is below that required to maintain the average age of the signalling assets. Network Rail's plans to increase efficiently the volume of signalling renewals are the subject of the ORR's Signalling Review, draft conclusions of which were published in September 2005[12].

Telecoms renewals

5.4 Although there is no detailed activity volume data for telecommunications within Network Rail's annual return, work on the Fixed Telecoms Network

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[12]   *Signalling Review – Draft conclusions of the medium term review.* ORR September 2005

(FTN) and Global System for Mobile Telecommunications - Railway (GSM-R) projects is progressing. The renewal of Network Rail's FTN and introduction of the GSM-R train radio system is substantially replacing the existing cable, transmission and radio networks.

5.5 The trial of GSM-R will take place in Scotland initially on the line between Helensburgh and Drumgelloch and then between Glasgow Central and Kilmarnoch next year. The installation of FTN and GSM-R in Strathclyde is almost complete and successful test calls have been made in advance of the trial. The current radio system in use in the Strathclyde area is now due for replacement and the early deployment of GSM-R in this area will provide a pilot to prove the system for the entire network.

5.6 Design work is underway on the national infrastructure with around 70% of the cable route surveyed and designed. Unit rates for the installation of the trackside cable have fallen following Network Rail's re-structuring of the installation contracts, and Network Rail has obtained approval for the use of super armoured fibre optic cables, which are sufficiently robust to be buried alongside the railway without needing costly troughing. This will contribute to further efficiencies to be secured within the project.

5.7 ACR2003 set Network Rail a challenging expenditure allowance for the telecoms projects. An efficiency plan has been introduced by Network Rail and its 2005-06 business plan forecasts delivery within the allowance.

Structures renewals

5.8 Network Rail is continuing the development of the Decision Support Tool known as the Structures Annual Cost Profile (SACP), which will assist long-term prediction of maintenance and renewal volumes, and allow evaluation of alternative priorities for those structures elements most critical to security of the network. The SACP informed ACR2003, which provided for some increase in expenditure on structures maintenance and renewals, and this is reflected in Table 14, which shows renewal activity in 2004-05 for the various structures categories.

Table 14: Structures renewal volumes

Measure		Achievement in 2003-04	Achievement in 2004-05
Structures	**Bridges**	195 tasks (prevention, repair, strengthening, replacement)	260
		5,611 m² deck replacement	10,222 m²
	Culverts	9 tasks (prevention and repair)	16
	Retaining walls	8,811 m²	2,635 m²
	Earthworks	146 tasks (prevention and repair)	106
	Tunnels	13 tasks (prevention and repair)	38

Source: Network Rail's 2004 and 2005 annual returns

5.9   Bridges comprise the largest component of the structures stock. Their maintenance and renewal is essential to the security and reliability of the network.

- Out of a total of some 40,000 bridges, 260 were subject to renewal or remediation with a scheme value greater than £100,000. This represents an increase of 33% on the previous year's total of 195.

- The area of deck replaced is also up by 82% at 10,222 m². With long-life assets, variations in expenditure from one year to the next are not necessarily significant, reflecting more the variation in type and complexity of projects undertaken from year to year.

- Culvert renewals reported for 2004-05 reflect only those renewals greater than £50,000, under the definition of the asset reporting measure. The increase to 16 is not significant in the total stock of around 23,000 culverts and we will review with Network Rail whether renewals under £50,000 should also be reported. The low level of interventions was in line with the planned activity and reflects the good condition of the asset.   There is no evidence of a decline in condition.

- The reduction in retaining wall interventions this year is primarily a consequence of the inclusion of a single major intervention of 7,600 m2 in area. The asset reporting measure again only reports interventions

of value greater than £50,000.   There is no evidence of a decline in condition.

- Earthworks interventions for 2004-05 were made at 106 sites. Although this is a reduction from 2003-04 total of 146, this is mainly due to reduction in repair activity arising from poor weather in 2003-04 rather than preventative works. This is a major renewals area, second only to bridges.

- There are approximately 700 tunnels on the network with a combined length of 200 miles. Network Rail has a stated policy of improvement from the lower condition standard inherited from Railtrack. An increase in schemes greater than £50,000 from 13 to 38 was reported in 2004-05 A number of major projects were evident around the country, for example at Ipswich, Strood and Chipping Sodbury.

Electrification and power supply renewals

5.10   Good progress was made during the year on the upgrading of the Southern region power supply in support of the introduction of new trains to replace slam door stock. From July 2004, restrictions to limit the number of new trains being commissioned were removed as Network Rail had targeted critical locations where power was inadequate. By the end of the year over 60% of new or upgraded sub-stations (56 out of 90) had been completed and extensive feeder and cabling works were in progress. A total of 1,300 out of 2,200 impedance bonds had been replaced with the remaining replacements on programme.

Actions

5.11   We will continue to actively monitor Network Rail's renewal activities against its business plan forecasts, particularly in respect of signalling. Efficiency of renewals is dealt with in Chapter 6.

6. Expenditure and efficiency

6.1 The Access Charges Review 2003 (ACR2003) established a revenue allowance for Network Rail for control period 3 (CP3) based on a defined set of outputs. Embedded within this revenue allowance is the assumption that it is possible for Network Rail to reduce its operating, maintenance and renewals (OMR) unit costs by at least 31%[13] over the period.

6.2 The purpose of this chapter is to compare Network Rail's 2004-05 OMR expenditure with the allowance made at ACR2003 and to explain the variance from this. Expenditure on major investment projects is not included in this chapter but is assessed separately in Chapter 8. Understanding the extent and cause of any variations in actual versus projected OMR expenditure is important in assessing the extent to which Network Rail is meeting the assumptions made in setting its revenue allowance. We also set out action we expect Network Rail to undertake to improve its knowledge of unit costs and efficiency.

> Network Rail underspent on controllable non-WCRM operating, maintenance and renewals expenditure by £527million in 2004-05, a 12% underspend, versus the allowance made at ACR2003. The majority of the underspend stemmed from deferral of renewals expenditure to later in the control period.
>
> Of this underspend, we have attributed £165m to Network Rail's outperformance of its regulatory targets. The in-year financial benefit of the total underspend in 2004-05 is £152m.
>
> It should be noted that unit cost information for 2004-05 is limited, and so pragmatism has necessarily been employed in assessing the extent of unit cost reductions and the causes of underspend. However, a programme is in place to ensure more comprehensive and robust reporting of unit cost indices from 2005-06. Consequently, as the current control period progresses, a more rigorous evaluation of underspend and efficiency will become viable.

6.3 The majority of expenditure figures in this chapter are derived from Network Rail's audited Regulatory Accounts and annual return. Other supporting information has been provided by Network Rail and, as necessary, the

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[13] Improvements in scope efficiency are not considered to contribute towards the unit cost efficiency target.

independent reporters have audited this. As such, there are some minor differences to the data reported in the fourth quarter (Q4) Network Rail Monitor published in June 2005 due to amendments following the audit process, since the expenditure used in the *Network Rail Monitor* is not audited. Furthermore, the comparison in the *Network Rail Monitor* is between the (un-audited) expenditure and Network Rail's own budgets, whereas this chapter compares the audited data with the projections from the ACR2003. Network Rail's own budgets are slightly different to the ACR2003 projections.

Expenditure

6.4   The ACR2003 revenue allowance was based on forecast OMR expenditure of £23.6 billion[14] over five years, and assumed a 31% reduction in unit costs (30% for controllable opex[15] and non-West Coast route modernisation (WCRM) renewals and 35% for maintenance).

6.5   For the financial year 2004-05, the first year of the current five-year price control period, £4.3bn in controllable non-WCRM OMR expenditure was projected, incorporating an 8% improvement in unit costs across OMR.

6.6   Network Rail's actual controllable non-WCRM OMR expenditure amounted to £3.8bn for the year, an underspend of £527m, or 12%. A breakdown of Network Rail's projected and actual expenditure is set out in table 15.[16]

6.7   The majority, almost 80%, of Network Rail's OMR underspend was in the renewals category, with underspend in operating expenditure accounting for the majority of the remainder. Non-WCRM renewals expenditure came in more than 20% below the projections in ACR2003, with 'signalling' and 'plant and machinery' accounting for more than half of this.

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[14]   All figures are in 2004-05 prices unless otherwise specified.

[15]   Controllable opex refers to that part of operating expenditure that Network Rail is deemed to have control of, such as staff costs. It excludes non-controllable items such as the licence fee.

[16]   For completeness, this also shows total operating and WCRM renewals expenditure

Table 15: Network Rail actual versus ACR2003 projected 2004-05 OMR expenditure

Category £ million, 2004-05 prices	Actual spend	ACR2003 determination	Underspend	% underspend
Operating expenditure	1,181	1,248	67	5.4%
Of which controllable	934	1,018	84	8.3%
Maintenance	1,271	1,296	25	1.9%
Renewals	2,653	2,999	346	11.5%
Non WCRM	1,617	2,035	418	20.5%
Track	609	631	22	3.5%
Structures	263	312	49	15.7%
Signalling	183	312	129	41.4%
Telecoms	201	232	31	13.4%
Electrification	26	49	23	46.9%
Plant and machinery	77	185	108	58.4%
Operational property	172	183	11	6.0%
Other (inc. IT)	86	131	45	34.4%
WCRM	1,036	964	-72	-7.5%
Total OMR expenditure	5,105	5,543	438	7.9%
Controllable non-WCRM OMR expenditure	**3,822**	**4,349**	**527**	**12%**

Source: Network Rail's Regulatory Accounts and Network Rail's 2005 annual return

Monitoring and treatment of underspend

6.8   We set out in a consultation document published in June 2005 our proposed approach to the monitoring and treatment of underspend and efficiency[17]. The consultation period ended on 31 August 2005 and we are currently reviewing responses and preparing our final policy statement, which we intend to publish by the end of 2005.

6.9   Any underspend achieved while complying with the output targets specified in ACR2003 and not compromising long-term asset condition and serviceability of the network will be classed as outperformance. Any underspend that does

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[17]   *Monitoring and treatment of underspend and efficiency: consultation on a proposed policy statement,* Office of Rail Regulation, June 2005. The document is available on our website at: www.rail-reg.gov.uk/upload/pdf/237.pdf.

result in the long-term asset condition and serviceability of the network being compromised will be classed as underperformance.

6.10 Network Rail will be allowed to retain the benefit of any outperformance for the duration of CP3, but will not be allowed to benefit from underperformance. Network Rail's revenue may be adjusted at the next access charges review to reflect any underperformance.

6.11 Network Rail is currently developing its proposed criteria for the use of any outperformance. The criteria will need to consider the most appropriate use of the outperformance taking into account Network Rail's financial position and the management of its business over the control period.

6.12 Our proposed approach to monitoring any underspend is based on its categorisation into three causes:

- outperformance of unit cost efficiency targets;

- deferral of activities; and

- changes in the scope of activity.

Analysis of 2004-05 underspend

6.13 The remainder of this chapter considers the breakdown of Network Rail's underspend and, in particular, the proportion that can be considered to be outperformance is considered below for each major expenditure category.

6.14 As highlighted above, unit cost information for 2004-05 is limited. However, Network Rail has now put in place a programme to implement more comprehensive and robust reporting of unit cost indices for maintenance and renewals expenditure from 2005-06, which we will monitor to ensure that it is delivered. Consequently, as the current control period progresses, a more rigorous assessment of underspend and efficiency will become viable.

6.15 The independent reporters were commissioned to assess the implications of Network Rail's underspend in relation to renewals and reduced activity volumes in 2004-05[18].

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[18] *Opinion on Network Rail budget underspend 2004-05.* Halcrow and Mouchel Parkman, September 2005. The report will be made available on ORR's website.

Operating expenditure

6.16   As operational activity has a broadly fixed annual purpose, there is limited scope for either deferral of expenditure or descoping of activities. The real change in controllable opex is therefore used to measure the extent to which Network Rail has achieved opex efficiency gains. Although this efficiency measure does not normalise for the size of the network or level of traffic, we believe that this is an appropriate measure at present given the considerable economies of scale and scope in Network Rail's operations.

6.17   Table 16 sets out Network Rail's opex performance for 2004-05.

Table 16: Network Rail operating expenditure analysis, 2004-05

2004-05	ACR2003 determination		Actual expenditure	Underspend against ACR2003 post-efficiency	Efficiency	
£ million, 2004-05 prices	Pre-efficiency	Post-efficiency			Total Gain	Out-performance
Controllable opex	1,107	1,018	934	84	16%	8%
Non-controllable opex	230	230	247	-17	-	-
Total opex	1,337	1,248	1,181	67	-	-

Source: Network Rail's 2005 Regulatory Accounts and ACR2003

6.18   Based on the real reduction in controllable opex, a 16% improvement in opex efficiency was achieved - an 8% outperformance of the 8% target assumed in ACR2003.

6.19   Network Rail's explanation for outperformance on opex includes a favourable one-off insurance settlement (£50 million), reductions in staff and consultancy costs (£42 million), and reduced insurance premiums (£22 million). Higher than expected costs in other areas – notably pension charges (£30 million) and bonuses (£30 million) – partly offset these.

6.20   These opex items provided by Network Rail have not been audited. At present the regulatory accounts only report total controllable opex and non-controllable opex. We will be working with Network Rail in 2005-06 to develop more detailed reporting and analysis of opex performance.

Maintenance expenditure

6.21 For 2004-05, the efficiency improvement in maintenance expenditure is assessed on the basis of the change in total maintenance expenditure per equated track mile (ETM)[19], with deferrals and change in scope of activity assumed to be zero. The weaknesses of relying on this single measure for maintenance expenditure efficiency and the weaknesses in the current methodology for calculating ETMs are recognised[20].

6.22 Network Rail is currently in the process of developing a range of maintenance unit cost measures as well as improving the calculation of ETMs. For 2004-05 there was no change in the number of ETMs over 2003-04, which means that the assessment of the change in maintenance efficiency can effectively be made by comparing the total change in maintenance expenditure. From 2005-06, the analysis of unit cost efficiency in maintenance expenditure will be extended to include Network Rail's new maintenance unit cost measures.

Table 17: Network Rail maintenance expenditure analysis, 2004-05

£ million (2004-05 prices)	ACR2003 determination		Actual expenditure	Underspend against ACR2003 post-efficiency	Efficiency	
	Pre-efficiency	Post-efficiency			Total gain	Out-performance
Maintenance	1,408	1,296	1,271	25	10%	2%

Source: Network Rail Regulatory Financial Statement and ACR 2003

6.23 Network Rail's 2004-05 maintenance expenditure performance is set out in table 17. Efficiency has improved through reductions in plant, materials and employee costs. The latter will, in part, be related to the company bringing maintenance back in-house, which is something that we took account of at ACR2003 when we determined the efficiency profile for the control period. Again, it should be noted that the individual expenditure categories have not been audited. As with operating expenditure we plan to work with Network

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[19] The ETM metric is based on the amount of expected activity necessary to maintain the network to a certain standard.

[20] For example, as ETM is based on expected rather than actual volumes, lower than anticipated activity can cause apparent efficiency improvements where none have been achieved. ORR (June 2005), 'Monitoring and treatment of underspend and efficiency: consultation on a proposed policy statement', p23.

Rail in 2005-06 to develop more detailed reporting and analysis of maintenance performance and, as appropriate, include this in the regulatory accounts.

Renewals expenditure

6.24   We have used a combination of the available unit cost data and Network Rail's own proxy for unit cost efficiency to assess the improvement in unit costs. The reporters assessed both the robustness of Network Rail's process for attributing its renewals underspend to deferrals and scope change and the sustainability of these components of underspend.

6.25   The data on renewals efficiency contained in Network Rail's 2005 annual return reflect only activities covered by its Major Projects and Investments programme (around 80% of renewals expenditure). We have therefore drawn additionally on further information provided to us by Network Rail subsequent to the publication of the 2005 annual return in order to provide an assessment in relation to total renewals expenditure.

Renewals unit cost efficiency

6.26   The unit cost data available for 2004-05, covering 54% of ex-WCRM renewals, as provided by Network Rail, are set out in table 18.

Table 18: Available unit cost indices for renewals

Real index, 2003-04=100	2003-04	2004-05	% change
Track	100	95.3	4.7%
Plain line	100	94.5	5.5%
Switches and crossings (S&C)	100	97.3	2.7%
Civils	100	86.0	14%
Average, expenditure weighted	100	92.1	8%

Source: Network Rail's 2005 annual return and ORR calculations

6.27   The expenditure-weighted average reduction in unit costs for the two areas of renewals covered (track and civils) is 8%. If it is assumed that efficiency improvements achieved in these two key areas are representative of renewals

expenditure in general, this suggests that Network Rail's performance is in line with the 8% unit cost efficiency target assumed in ACR2003.

6.28   Network Rail has stated that it believes that these unit cost indices understate true efficiency performance because they include the costs of development work for activity to be undertaken in later years (which are especially significant for switches and crossings (S&C) renewals) and the impact of contractual settlement on expenditure.

6.29   In our view, both of these cost categories are true costs of the business and should be reflected in the efficiency analysis. The issue raised with respect to development costs may mean that the figures are distorted on a year-to-year basis, but these effects should even out in the medium term, and certainly over the course of a price control period.

6.30   We have supplemented the above evidence with the evidence provided by Network Rail's on its 'activity efficiency', which includes unit price savings and outperformance on target prices in the company's renewals work.

6.31   Table 19 summarises activity efficiency figures provided by Network Rail.

Table 19: Network Rail's 'activity efficiency' for renewals

£ million 2004-05	ACR2003 Unit Cost Assumption	Activity Efficiency Achieved
Track	8%	9%
Structures	8%	13%
Signalling	8%	13%
Telecoms [21]	1%	3%
Electrification	8%	16%
Plant and Machinery	8%	20%
Operational Property	8%	15%
Other (inc IT)	8%	25%
Total Non-WCRM	8%	12%

Source: ACR 2003 and Network Rail calculations underlying the 2005 Annual Return.

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[21]   The 8% efficiency adjustment for telecoms only applied to work outside FTN/GSM-R projects.

6.32   This suggests an efficiency improvement of 12% for renewals expenditure in 2004-05, ahead of the 8% unit cost efficiency target assumed in ACR2003.

6.33   Although the company claims that the activity efficiency measure approximates unit cost efficiency, we consider that it is likely to capture at least some changes in scope as well, and so may overstate pure unit cost efficiency.

6.34   Taken together, the available unit cost and activity efficiency data suggest a range for overall renewals unit cost efficiency of 8-12%, i.e. at least in line with the efficiency target for 2004-05.

6.35   The incomplete coverage of the unit cost data together with the activity efficiency data in table 19 above suggests that unit cost performance may have been greater in the asset classes not covered by the unit cost data than for those for which data is available. For 2004-05, we consider that the 12% improvement in activity efficiency is likely to provide a broadly acceptable estimate of renewals unit cost efficiency for 2004-05.

Deferrals

6.36   In detailed data submitted to us following the publication of the 2005 annual return, Network Rail attributed £362m (87%) of its £418m underspend in non-WCRM renewals to deferrals, of which more than half of was unplanned and the most significant component of which was signalling.

6.37   The reporters concluded that the attribution process for the data sampled was robust and found no items that they believed should be reattributed. They also considered the deferrals to have no discernable impact on asset condition measures in the short term[22].

Scope change

6.38   The detailed data presented to us by Network Rail suggests a net increase of £33m arising from changes in the scope of renewals activity from the levels assumed in the 2004 business plan, including changes in the extent of work required and the identification of additional activity. Within this total, some

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[22]   It should be noted that the reporters' study covered only the 80% of renewals falling under the Major Projects and Investment heading. The attribution of the remaining 20% of renewals expenditure has not been assessed.

projects were reduced in scope. The reporters were asked to assess whether these reductions in scope, of around £10m, were likely to have an adverse impact on network serviceability and sustainability.

6.39 The reporters' view is that, in general, changes in scope are controlled and authorised by a robust process and that the attribution of underspend to scope change is sound. They also concluded that the changes in scope should not compromise either network condition or serviceability.

Conclusion of renewals efficiency

6.40 Table 20 sets out our attribution of Network Rail's non-WCRM renewals underspend based on the evidence set out above. Based on the reporters' assessment of the change in scope, we consider the reduction in scope relating to specific projects to be efficient.

Table 20: Non-WCRM renewals underspend attribution, £ million (2004-05 prices)

	Underspend against ACR2003	Unit cost efficiency	Deferral	Scope change
£m	418	89	362	-33
% of underspend	-	21%	87%	-8%

Source: Network Rail data

Overview of underspend

6.41 In summary, of Network Rail's £527m underspend in controllable non-WCRM OMR expenditure in 2004-05 against the ACR2003 determination, £362m can be attributed to deferral of renewals, -£33m can be attributed to changes in scope and £198m to unit cost efficiency. Changes in scope are not considered to have impacted on the condition or serviceability of the network.

6.42 As set out in table 21, the total amount of the underspend that can therefore currently be attributed to outperformance in relation to OMR expenditure is £165m (£198m unit cost outperformance minus the £33 million increase in scope).

Table 21: Attribution of OMR underspend to outperformance, 2004-05

£million (2004-05)	Underspend versus ACR2003	Unit cost efficiency	Scope change	Expenditure Outperformance
Controllable operating expenditure	84	84	-	84
Maintenance	25	25	-	25
Non-WCRM renewals	418	89	-33	56
Total controllable non-WCRM OMR	527	198	-33	165

6.43   The in-year financial benefit derived from the 2004-05 underspend is set out in table 22. The lower financial benefit compared with the underspend reflects the fact that renewals expenditure is funded via the RAB. Consequently, renewals expenditure is remunerated over a 30-year period via the amortisation allowance, rather than fully in the year in which it is incurred, as is the case for both operating and maintenance expenditure.

Table 22: In-year financial benefit of the 2004-05 OMR underspend

£million (2004-05)	In-year financial benefit
Controllable operating expenditure outperformance	84
Maintenance outperformance	25
Financial benefit from renewals underspend[23]	43
Total	152

Actions

6.44   We expect Network Rail to:

- Implement improved monitoring of maintenance and renewals unit costs.

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23   7% rate of return x £418 million renewals underspend + amortisation allowance of 1/30th x £418m

- Complete its review of the calculation of ETMs and make changes to the current methodology if necessary.

- Develop its criteria for the use of outperformance.

6.45 We will:

- Work with Network Rail to develop more detailed reporting and analysis of operating and maintenance expenditure.

- Monitor and audit Network Rail's implementation of improved maintenance and renewals unit cost measures.

- Complete and publish our final policy statement on the monitoring and treatment of underspend and efficiency.

7. Financing

7.1   This chapter comments on Network Rail's financial position in 2004-05 against the assumptions that were made as part of ACR2003.

> Network Rail has issued £3.6bn in new debt over the course of 2004-05 under its Debt Issuance Programme, primarily to fund the deferral in grant income and additional renewals and enhancements. Net debt now stands at £15.6bn, some £1.8bn lower than Network Rail budgeted in its 2004 Business Plan, mainly as a result of a significantly lower level opening debt at 1 April 2004 than had been assumed, lower interest rates and significant underspending on renewals and enhancements.
>
> The net debt to RAB ratio, at 77%, remains comfortably below the 85% regulatory trigger level.

Access Charges Review 2003

7.2   The ACR2003 final conclusions set out in detail the amount of money that Network Rail is entitled to receive for operating, maintaining, renewing and enhancing the network over the five years of the control period. The final conclusions envisaged a profile of income over the control period and the share of this that would be paid through track access charges and through direct grants from the Strategic Rail Authority (SRA) in each year. However, in March 2004, ORR published a follow-up document[24], which approved Network Rail's proposed amendments on how the revenue entitlement should be financed over the control period.

7.3   The March 2004 document approved proposals to re-profile Network Rail's income so that it would receive a larger proportion of its revenue entitlement than originally envisaged by ACR2003, through direct grants from the SRA/DfT, thereby reducing the share of the entitlement received from fixed track access charges paid by train operators[25]. In addition, a portion of

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[24]   Access Charges Review 2003: Regulator's approval of Network Rail's proposed financing arrangements, March 2004.

[25]   Towards the end of the 2003 ACR, the SRA/DfT made a joint submission to the Regulator asking for the re-profiling of income because Government accounting rules prohibit borrowing to cover current expenditure over the economic cycle. Although higher access charges would be used to support capital expenditure by Network Rail, an increase in franchise support through track access charges would be classified as current expenditure.

Network Rail's grant income in the first two years of the control period was re-profiled to later years. The resulting shortfall in income in 2004-05 and 2005-06 is to be financed through additional borrowings by Network Rail. The amount deferred in 2004-05 was £1.6billion, and a further £1.7billion will be deferred in 2005-06.[26]

Debt

7.4   Network Rail launched its Debt Issuance Programme (DIP) in November 2004. The DIP is a long-term funding platform that enables the company to raise a wide range of debt finance. The DIP is supported by the Government through a financial indemnity that allows the company to borrow at a AAA credit rating which means that Network Rail has a relatively low cost of debt.

- By the end of 2004-05, Network Rail had issued £3.6 billion under the DIP, primarily to finance the deferral of grant income referred to above and also to fund the portion of renewals and enhancements expenditure that was not funded through the allowance for amortisation[27].

- Network Rail's net debt increased from £12.6 billion to £15.6 billion over 2004-05. This is £1.8 billion lower than the company forecast in its 2004 business plan, reflecting the year's underspend and the significantly reduced opening debt at 1 April 2004 and lower than forecast interest rates[28].

- As Network Rail deferred a significant amount of activity from 2004-05, ORR expects the variance between actual and budgeted net debt to fall over the later years of the control period once the rescheduled activity is conducted. Network Rail forecasts that its net debt will increase to £18.8 billion, in nominal terms, by March 2006 and to £20.4 billion by the end of the control period in March 2009.

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[26]   Figures in 2004-05 prices.

[27]   Under the building block approach to calculating Network Rail's revenue requirement, expenditure on renewals and enhancements is added to the RAB. As the value of the RAB increases with the addition of new capital expenditure, an offsetting reduction in the value of the RAB is made to reflect amortisation (or depreciation) of Network Rail's assets over time. The allowance for amortisation is included in the calculation of the revenue requirement and the company recovers this amount through grants and access charges. Network Rail funds the difference between expenditure on renewals and enhancements and the allowance for amortisation through borrowing.

[28]   We have confirmed that we will be making a RAB reduction in 2009 to reflect the reduced opening debt.

The regulatory asset base (RAB)

7.5   ACR2003 projected a £2.6 billion rise in the RAB over 2004-05, from £18.8 billion to £21.4 billion, on the back of significant enhancement and renewals expenditure.

- At 31 March 2005, the RAB, as recorded in Network Rail's regulatory accounts, stood at £20.46 billion. This variance with the ACR2003 projection of £943 million is due to two downward adjustments of £664 million (attributable to two adjustments that were required to reflect the difference between forecast and actual expenditure and net debt levels prior to the beginning of the current control period) and £330 million due to underspend on enhancements funded on an emerging cost basis.

- The regulatory accounts also include an increase to the RAB of £52 million in investments (including financing costs) not funded in ACR2003 and yet to be approved by ORR.

Debt to RAB ratio

7.6   Condition 29 of Network Rail's Network Licence imposes limits on the level of the company's net debt as a percentage of the RAB. Under this condition, the net debt is limited to 90% of the RAB. Below this limit, the licence condition contains a trigger, set at 85%, at which Network Rail is required to submit to ORR a remedial plan setting out how it will reduce its borrowings below 85%.

- Network Rail's net debt to RAB ratio at the end of 2004-05 was 77%, comfortably within the regulatory limit. Indeed, the gearing ratio remains below 80% even if the RAB is adjusted down for the full underspend in renewals (see Chapter 6).

- Based on Network Rail forecasts for nominal net debt and the ACR2003 RAB projections, Network Rail's debt to RAB ratio is currently expected to remain comfortably below the 85% trigger throughout the control period.

Other financial Indicators

7.7   We monitor a number of financial indicators in addition to the debt to RAB ratio, which we believe provide a good indication of Network Rail's financial health. Table 23 shows how key financial indicators for Network Rail stood at the end of 2004-05.

Table 23: Financial Indicators

	2004-05
Adjusted interest coverage ratio (AICR)	-0.18x
Liquidity	£7.4bn
Liquidity ratio	1.12x
Net debt	£15.6bn
RAB	£20.4bn
Debt to RAB	77%
85% of RAB less debt	£1.7bn
85% RAB less debt / forecast expenditure	31%

Source: Network Rail data and ORR calculations

- The adjusted interest coverage ratio measures Network Rail's operating cash flow against interest costs. This assesses Network Rail's ability to meet interest payments from operational cash flow. An adjustment is made to the operating cash flow, so that the calculation only includes the level of capital investment that is required to maintain the RAB in steady state, i.e. any capital investment that improves the network is not included in the ratio.

- In ACR2003 we suggested that a well-managed company should be able to maintain this ratio above 1.5. However, due to the deferral of revenues in the first two years of the control period, Network Rail's adjusted interest coverage ratio is negative. This should be reversed from 2006-07 onwards when the deferral of revenue will be reversed and the company's income will increase.

- Liquidity is a measure of the funds available to a company to finance its business. At the end of 2004-05, Network Rail had access to £7.4billion of undrawn financial facilities. The liquidity ratio measures liquidity against forecast cash outflows for the year ahead. Network Rail's liquidity ratio of 1.12x means that, in theory, it could finance its activities for over a year even if it had no revenue coming in to the business.

- The RAB less debt ratio is a proxy for the level of buffer in the company to absorb shocks to costs and revenues. As Network Rail's Network Licence requires it to keep its borrowings below 85% of RAB, in practice the buffer available to the company is the difference between 85% of RAB and net debt. Table 22 shows that at the end of 2004-05 this buffer was £1.7billion.

- The 85% RAB less debt/forecast expenditure figure measures the level of the buffer against the forecast expenditure over the next year. Thus, this shows the amount by which Network Rail could overspend on its budget in the current financial year without breaching the regulatory debt/RAB trigger of 85%. At the end of 2004-05, Network Rail could have tolerated overspend of 31% above its budget before breaching this threshold.

Actions

7.8 We will:

- continue to monitor Network Rail's financial position on a regular basis; and

- review and comment on the company's financial performance in the quarterly *Network Rail Monitor* publication.

8. Major investment projects

8.1   This chapter assesses Network Rail's delivery of major investment schemes (i.e. enhancements) including the modernisation of the West Coast route, the power upgrade to accommodate the introduction of new trains in the Southern region, major telecoms projects and other enhancements.

> Network Rail's total expenditure on major investment projects during 2004-05 was £652 million, compared to ACR2003 allowance of £1086 million, a variance of £434 million. The principal reason for this difference was Network Rail's underspend of £108 million on health and safety schemes and of £319m on the "transition schemes" (SRNTP, CTRL blockade and Thameslink 2000 development).

Expenditure

Table 24: Comparison of actual and determined enhancement expenditure (£m in 2004-05 prices)

Category	ACR2003	Actual spend	Variance from ACR2003
SRNTP – PSU* works	480	249	231
SRNTP – non-PSU works (Network Rail delivered)	30	25	5
CTRL Blockade	115	60	55
Thameslink 2000 development	34	6	28
Sub-total: Transition schemes	659	340	319
LMD Pollution Prevention	23	10	13
Other health & safety schemes	158	63	95
Telecoms enhancements	5	0	5
WCRM enhancements	241	239	2
Total	**1086**	**652**	**434**

* power supply upgrade

Source: Network Rail's 2005 Regulatory Accounts

8.2 Table 24 compares Network Rail's actual expenditure on enhancements with ACR2003 determination.

- Total expenditure on enhancements during 2004-05 was £652 million, compared to the £1086 million determined by ORR in ACR2003, a variance of £434 million. The principal reason for this difference was Network Rail's underspend of £108 million on health and safety schemes, where progress on several schemes was slower than expected, and of £319 million on the "transition schemes" (SRNTP, CTRL blockade and Thameslink 2000 development)[29].

- The underspend on safety enhancement schemes was primarily due to:

    - the changed industry development strategy and timing for ERTMS;

    - delays to the development of fitment designs for TPWS+; and

    - cancellation of the original proposal for ATWS as it would not have delivered the required safety risk reduction.

- Network Rail has also put forward £50 million spend on additional schemes incurred during the year, primarily property investments. ORR is currently assessing these schemes against our published criteria, as set out in our February 2005 consultation document on the policy framework for investments.[30] This expenditure is not included in table 23 as ORR has not approved the expenditure at this stage.

Southern region new trains programme (SRNTP)

8.3 The underspend of £236 million in the year (£274 million against an assumption of £510 million) was primarily due to SRA-led reductions in scope and management efficiencies achieved by the joint SRA/Network Rail project team. Network Rail expects substantially to complete the works on the programme by the end of 2005-06, although we have some concerns over the scope of works proposed at depots and associated facilities required to deliver overall system outputs (both infrastructure and new rolling stock). A period of prolonged operation to refine power demands is required before the final scope is fixed. This cannot occur until all new trains are in service, so it

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[29] The transition schemes are treated on an emerging cost basis, so that any variance against the ACR2003 assumptions is logged up and will lead to an adjustment to the RAB in 2009.

[30] Policy Framework for Investments: an initial consultation, Office of Rail Regulation, February 2005.

is likely that Network Rail will need to retain (or carry forward) a proportion of its funding for this purpose.

West Coast route modernisation

8.4   Network Rail delivered infrastructure to facilitate incremental journey time improvements (principally Crewe - Preston and Weaver - Liverpool) for the June 2005 timetable change. The main risk to delivery of the infrastructure improvements necessary for the December 2005 timetable change (principally Preston - Glasgow) is lost engineering access (for example, late starting possessions) compared with the project plan, as there is little float to accommodate any work that needs to be rescheduled.

- The current forecast expenditure estimate is higher than the regulatory funding allowance by £363m (12%). From this shortfall, Network Rail has identified and committed to savings of £104m. ORR has written to Network Rail to make it clear that it is expected to deliver the outputs, in terms of journey time improvements and asset performance, without any increase in funding.

- Following the introduction of the September 2004 timetable, there was a significant increase in minutes delay caused by both infrastructure incidents and train operator delays (principally reliability of rolling stock) from 278,289 minutes in period 1 to a high of 401,622 in period 8. ORR encouraged Network Rail to give particular effort to addressing performance improvements on the West Coast main line. Performance improved towards the end of the year, dropping to a total of 205,710 minutes delay for period 13 (6 March to 2 April), the lowest for any period in the year (49% lower than period 8).

Telecoms projects

8.5   The replacement of Network Rail's Fixed Telecoms Network (FTN) and introduction of the GSM-R (Global System for Mobile telecommunications - Railway) train radio system were funded in the Access Charges Review 2003. Work is in its early stages. Installation of the FTN & GSM-R in Strathclyde is almost complete. The current radio system in use in the Strathclyde area is now due for replacement and the early deployment of GSM-R in this area will provide a pilot to prove the national system. Due to minor slippages in the programme, Network Rail did not incur any expenditure on other telecoms enhancements in the year, against a determination assumption of £5 million.

Other schemes

8.6   Network Rail also underspent on the two transition schemes other than SRNTP, due to deferral of Thameslink 2000 development work and savings achieved on the CTRL blockade scheme. In total, there is a further underspend of £83 million on these two transition schemes.

8.7   On the light maintenance depot pollution prevention programme, Network Rail spent £10 million against the ACR2003 assumption of £23 million, due to delays in commencing work at depots across the network. ORR sought information from Network Rail to explain how it would deliver the required outputs and comply with its statutory obligations and we requested further reports used by Network Rail's management to monitor the programme. Evidence from the early part of 2005-06 is that project management of this programme has improved.

Actions

8.8   We expect Network Rail to deliver the December 2005 timetable change for WCRM. Whilst some infrastructure works will not be delivered until early 2006, this is not expected to affect journey times or timetable delivery.

8.9   We will continue to monitor Network Rail's delivery of the major schemes described above as well as minor schemes, including those promoted by Network Rail through the proposed Network Rail Discretionary Fund, and schemes promoted by third parties (i.e. bodies other than Network Rail or Government). More detail on arrangements for these schemes will be set out in ORR's final policy conclusions on the investment framework.

9. Customer and supplier satisfaction

9.1   This chapter assesses recent surveys of Network Rail's relationship with its train operating customers and suppliers.

> Network Rail commissioned a MORI survey of customer satisfaction in 2004-05. The level of satisfaction amongst passenger train operators improved, but fell amongst freight operators. The survey concluded that Network Rail's customers feel it still cannot be trusted to do the best it can and does not understand the business needs of train operators.

9.2   Network Rail commissioned MORI to carry out a survey of its customers in January/February 2005 to:

- provide an indication on areas where the business was performing well/poorly;

- track changes in opinion from the last survey in the winter of 2002; and

- focus on the views of train operators.

9.3   The survey indicates that, since 2002, communication in times of disruption and working relations have improved, but that customers do not trust Network Rail to do the best it can and feel the company does not understand fully their business needs. Areas where greatest improvements are needed are:

- pro-activity in identifying solutions to problems;

- responsiveness to queries and concerns;

- asset reliability;

- train regulation; and

- management of renewal contractors and station service suppliers.

9.4   Following the amendment of the Network Code to include Part L in April 2004, Network Rail is required to enter into Local Output Commitments (LOCs) with train operators, in which there is a commitment to achieve a specified reduction in the level of delay per train operator and a performance plan for

how the reduction is to be achieved. LOCs for 2004-05 came into force in October 2004 and were required to be consistent with the targets in ACR2003.

9.5   The industry is seeking to revise Part L of the Network Code further to introduce joint performance improvement plans (JPIPs).

Actions

9.6   We expect Network Rail to:

- Work pro-actively with train companies in resolving problems, improving train regulation and managing renewal contractors.

- Complete in 2005-06 the supplier satisfaction survey planned for 2004-05 but not carried out.

9.7   We will assess Network Rail's responsiveness to its customers and encourage the completion of the supplier survey in • 2005-06.

Annex A: Summary of targets, measures and achievements in 2004-05

1. Train Performance

Measure	ACR2003 target					Achievement in 2004-05
	2004-05	2005-06	2006-07	2007-08	2008-09	
Delays to all services (million minutes)	12.3	11.3	10.6	9.8	9.1	11.4
Delays to passenger services (minutes per 100 train kms)	2.34	2.12	1.97	1.8	1.65	2.19
Delays to freight services (minutes per 100 train kms)	No target					4.53

Source: ACR 2003 and Network Rail's 2005 annual return

2. Asset Condition and serviceability

Track

Measure	ACR2003 target	Achievement in 2004-05
Serviceability: Temporary speed restriction (TSR)	No target 2004-05	480
Broken rails	No more than 300 per year from 2005-06	322
Quality: Track geometry	Steady state required post 2003-04:	
	35m top (vertical deviation): standard: 50%, 90% 100%; target: 62.4% 89.2% 97.0%; No more than 2003-04 levels	50% 90% 100% 66.0% 90.9% 97.7%

	35m alignment (horizontal deviation):	
	standard: 50% 90% 100% target: 72.7% 92.9% 96.5%	50% 90% 100% 76.9% 94.1% 97.0%
	70m top (vertical deviation):	
	standard: 50% 90% 100%; target:: 63.6% 92.4% 95.3%	50% 90% 100% 67.7% 93.6% 96.2%
	70m alignment (horizontal deviation):	
	standard: 50% 90% 100% target: 79.5% 95.8% 97.2%	50% 90% 100% 82.8% 96.9% 98.0%
Level 2 **Exceedences**	Reduction to 0.9 per track mile by 2005-06	0.91
Asset stewardship incentive index	1.00 or less by 2008-09 as set out in Table 19.3 ACR2003	0.90

Source: Asset Reporting Manual and ACR 2003

Other assets

Asset type	Measure	ACR2003 target	Achievement in 2004-05
Earthworks	**Serviceability:** **Number of TSR sites and severity score**	No target 2004-05 total: 85 Severity score: 323 (ACR2003 - not worse than 2003-04)	37 157
Signalling	**Serviceability:** **Failures causing more than 10 minutes delay**	Not worse than 2003-04 level Total failures: 28,098	24,950
	Condition	Not worse than 2003-04 average condition grade of 2.5	2.5

Asset type	Measure	ACR2003 target	Achievement in 2004-05
Electrification **(separate for AC and DC**)	**Serviceability:** **for 3rd rail and OLE – failures causing more than 500 minutes delay**	Annual serviceability no worse than 2001-02 AC - no deterioration from 2001-02 total of 107 DC - no deterioration from 2001-02 total of 30	AC failure - 72 DC failure - 13
	Condition: **Substations and feeder stations, OLE and 3rd rail contact systems**	Return to 2001-02 condition level AC sub-station condition 2001-02: 2.1 DC sub-station condition 2001-02: 2.3 AC contact systems 2001-02: 1.8 DC contact systems 2001-02: 1.8	AC sub-station condition - 1.87 DC sub-station condition - 1.82 AC contact systems - 1.5 DC contact systems - 1.8
Structures	**Serviceability:** **TSRs**	Return to 2001/02 levels No target In 2003-04 total: 79 severity score 208	38 45
	Condition	Return to 2001 baseline of 2.1	2.1
Stations	**Condition**	No worse than 2003-04 average condition grade of 2.25	National average 2.23
	Facilities	No target	105.7
Depots	**Condition**	No worse than 2003-04 condition grade of 2.73	2.7

Source: Asset Reporting Manual; Network Rail's 2005 annual return and ACR2003

3. Activity volumes

Renewal activity	Network Rail 2004 business plan targets	Achievement in 2004-05 (excluding maintenance renewals)
Rail renewal	874	816
Sleeper renewal (all types)	695	670
Ballast renewal (all types)	690	685
Switches and crossings renewal	539	511
Signalling (SEUs)	Not available	1,635

Source: Network Rail's 2005 annual return

4. Network capability

Measure	Relevant target	Actual 2004-05
Line speed capability (track kms)	The regulatory targets for each of the network capability measures is for Network Rail to maintain the capability of the network for broadly existing use at April 2001 level, subject to network change procedures under Part G of the network code. Actual capability at April 2001 for each of the measures has yet to be confirmed by Network Rail.	Up to 35 mph – 4,163 40-75 mph – 16,927 80-105 mph – 7,650 110-125 mph – 2,741
Gauge capability (route kms)		W6 – 4,955 W6 & W7 – 2,794 W8 – 5,648 W9 - 1714 W9 & W10 - 939
Structures route availability (track kms)		RA 1-6 – 2,529 RA 7-9 - 26,319 RA 10 – 2,634
Electrification capability (track kms)		25 kV AC - 7,748 650/750 V DC – 4,497 Dual AC/DC - 35

Source: Network Rail's annual returns, ACR2003

Annex B: Key action points for Network Rail

This annex summarises the action points identified in the annual assessment to be addressed by Network Rail.

Chapter	Action

3	We expect Network Rail to:
	
	• Continue to provide industry leadership in working towards achieving and sustaining the current PPM target of 85%.
	
	• Demonstrate that it is committed to improving the PPM figure for all passenger train operators, especially, where progress so far has been limited.
	
	• Continue to develop sound and sustainable joint performance improvement planning with all train operators in order to continue to meet, or better, regulatory targets.
	
	• Further improve the management of disruption on the network by working face-to-face with operators in integrated control rooms where appropriate.
	
	• Ensure that staffing and competency levels in the reorganised train planning function are sustained in order to ensure:
	
	    • more rapid progress in reducing the performance impact of train planning errors;
	
	    • the firm control of possession planning; and
	
	    • that other timetable development processes, such as Route Utilisation Strategies (RUS), are also adequately resourced.
	
	• Continue to look for ways to reduce the impact of bad weather on train services.
	
	• Confirm that current network capability is correctly documented and published, developing additional capability measures where applicable as the asset register is developed, whilst ensuring that actual capability is brought back to the required standard (or processed as Network Change) where it currently falls short.
	
	• Lead the development of a target-loading gauge for each route in conjunction with the Vehicle-Structures System Interface Committee (VSSIC) and through the RUS process.
	
	• Cooperate fully with the industry in establishing a set of appropriate performance indicators for engineering possessions (including the disruption that they cause) whilst developing a more efficient engineering possession strategy that minimises the effects of possessions on passenger and freight services.

Chapter	Action
	• Demonstrate improvements in current levels of engineering productivity before implementing any more radical or disruptive possession strategy.
4	Generally, ORR expects Network Rail to: • sustain the improvements in asset performance and condition so as to contribute to continuing reductions in train delays: • By continuing to focus on detail and good engineering practice in delivering infrastructure maintenance and renewal activities. • To facilitate this by building upon the good foundations that have been laid for developing staff competencies and training, thus developing the overall experience of the workforce. • In consultation with its train operator customers, identify and resolve any specific problems or local issues where network capability, performance and asset condition are at variance with national trends and do not meet reasonable expectations and/or targets that define what current funding of the network is intended to achieve. Specifically, ORR expects Network Rail to: • Continue with the development and implementation of its asset information strategy, to meet individual programme milestones for component elements of the whole and to update and maintain the systems, demonstrating how it is complying with its licence obligations and achieving long-term improvement in its asset management processes. • Continue to improve its knowledge of the condition of specific asset types where this information is key to effective asset management and needs further improvement (for example, through data quality improvement, extending currently incomplete data or ensuring that inspection schedules are met) e.g. signalling interlockings, electrification power supply and distribution equipment, structural inspections, rail defect data. • In respect of stations, urgently implement a system to reform the station condition index in 2005-06, and in respect of depots make an explicit commitment to complete the assessment of, and report on, the condition of all its depots by 31 March 2007. • Improve its knowledge of the links between asset usage, maintenance and renewal input activities and the resulting outcomes in terms of network performance, reliability and condition. • Improve its knowledge of network capability in order to support Route Utilisation Strategies and the effective management of its assets. • Continue to build upon improvements in the management of temporary speed restrictions, reducing further the number of TSRs without ever compromising safety.

Chapter	Action
6	We expect Network Rail to: • Implement improved maintenance and renewals unit cost monitoring. • Complete its review of the calculation of equated track miles (ETMs) and make changes to the current methodology if necessary. • Develop its criteria for the use of outperformance.
8	We expect Network Rail to deliver the December 2005 timetable change for West Coast route modernisation (WCRM). Whilst some infrastructure works will not be delivered until early 2006, journey this is not expected to affect journey times or timetable delivery.
9	We expect Network Rail to: • Work pro-actively with train companies in resolving problems, improving train regulation and managing renewal contractors. • Complete in 2005-06 a supplier satisfaction survey planned for 2004-05 but not carried out.

Annex C: Key action points for ORR

Chapter	Action
3	We will: • Continue to work with the industry to revise Part L of the Network Code to formalise joint performance improvement plans (JPIPs). • Continue to monitor performance of both Network Rail and the operators and will provide regular updates in the Network Rail Monitor, published on the ORR website. • Use the independent reporter to review all aspects of the process of measuring network capability once the new reporter contract has been let in November 2005.
4	ORR will: • Continue to monitor asset condition and performance through receipt and scrutiny of Network Rail's regular asset condition reports, and produce quarterly reports of progress through 2005-06. • Identify areas where further investigation appears necessary, and through our regular liaison meetings with Network Rail undertake such asset-specific casework. • Continue to investigate how Network Rail uses information about condition of track TSRs to optimise its asset management decisions. • Continue to investigate how Network Rail uses asset information to forecast long-term activity and expenditure requirements. • Undertake an assessment of Network Rail's existing asset management processes and practices in the light of recognised good practice. • In consultation with Network Rail and industry stakeholders, we will approve suitable revisions to the asset register guidelines to reflect clear target dates for completing the various elements of its asset information strategy, and we will continue to monitor Network Rail's progress in delivering its strategy.
5	We will continue to actively monitor Network Rail's renewal activities against its business plan forecasts, particularly in respect of signalling
6	We will: • Work with Network Rail to develop more detailed reporting and analysis of operating and maintenance expenditure. • Monitor and audit Network Rail's implementation of improved maintenance and renewals unit cost measures.

Chapter	Action
	• Complete and publish our final policy statement on the monitoring and treatment of underspend and efficiency.
7	We will: • Continue to monitor Network Rail's financial position on a regular basis. • Review and comment on the company's financial performance in the quarterly Network Rail Monitor publication.
8	We will continue to monitor Network Rail's delivery of the major schemes described above and minor schemes, including those promoted by Network Rail through the proposed Network Rail Discretionary Fund, and schemes promoted by third parties (i.e. bodies other than Network Rail or Government). More detail on arrangements for these schemes will be set out in ORR's final policy conclusions on the investment framework.
9	We will assess Network Rail's responsiveness to its customers and encourage the completion of the supplier survey in 2005-06.