

2002 Annual Return to the Rail Regulator

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Executive summary

This is the second Annual Return from Railtrack to the Rail Regulator. It reports actual data for expenditure, operational performance, activity and asset condition for the 2001/02 financial year. There are six main sections in this Annual Return:

Operational Performance

Delays attributable to Railtrack's infrastructure and network management improved by 23% to 13.4 million minutes. The improvement was primarily due to a 4.8 million delay minutes reduction (82%) due to Gauge Corner Cracking (GCC) precautionary speed restrictions, as well as an improvement of 59% in delays due to severe weather. Overall delays due to many other categories increased compared to the previous year, reflecting primarily an increase in the average delay per incident.

Asset Condition & Serviceability

In 1999 we introduced a major programme to address broken rails. This has reduced the number to 535 in 2001/02, which was 24% better than the previous year, and 27% below the national regulatory target.

We achieved a significant reduction in track geometry faults (level 2 exceedences), as a result of our initiative to focus efforts on areas of poorest track, to achieve safety benefits. The number of level 2 exceedences was 26% better than the regulatory target.

There were also improvements in all 12 track geometry standard deviation measures. We were particularly encouraged by improvements in horizontal alignment, following the priority we gave to this work in the light of recent understanding of the impact of poor alignment on GCC.

Activity Volumes

Rail renewal volumes were 24% higher than the NMS forecast, sleeper renewals were 14% higher and ballast was 4% lower. We renewed 125 structures spans against 45 in the previous year. As this data only represents a small proportion of the total structures work, we are planning to introduce new measures from next year. During 2001/02 significant resignalling work was carried out at Dartford (27km), Leeds (6km) and on the West Anglia Route Modernisation project (60km).

Network Capability

Network capability data previously reported in the NMS and in the 2001 Annual Return was derived on an incremental basis, by adding or subtracting known changes during a year, to the previous year's figures. In order to address any errors in the original base data, we carried out a complete re-measure in 2001/02 and the new data is reflected in this Annual Return.

2001 NMS Reconciliation Statement

Maintenance expenditure was £950m, against a £898m forecast in the NMS and £698m during the previous year. It was greater than forecast partly as a result of more work being carried out to mitigate Gauge Corner Cracking (GCC). Renewals expenditure was £1,954m, against an NMS forecast of £2,328m and £1,749 during the previous year. Material differences between actual and forecast expenditure are explained in the body of this document.

Customer Reasonable Requirements (CRR)

We continued to improve clarity and robustness of CRRs, working with our customers to identify those which were ill defined, or no longer part of their business plans. During the year, 488 CRRs were withdrawn and a further 177 were completed. After adding 70 new requirements, the total number of CRRs live at 31 March 02 was 403.

Introduction

This is the second Annual Return from Railtrack to the Office of the Rail Regulator (ORR). It reports on expenditure, operational performance, activity and asset condition in 2001/02.

The Annual Return is a key regulatory document and is the primary means by which Railtrack demonstrates progress in delivering outputs assumed in the Periodic Review. The Annual Return is also publicly available, enabling other stakeholders to use it as an important reference document.

Scope of Reporting

Many of the regulatory output targets for assets and network capability are specified as 'no deterioration from the position at the start of the second control period'. In some cases the target will relate to levels observed in 2000/01, whilst for others the baseline will be established later, when a sufficient sample is achieved (e.g. for asset condition).

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

Accuracy of Asset Data

We have been putting considerable effort into improving data quality, by clarifying definitions and procedures for measures, and by ensuring that staff involved in recording data have been properly trained. We have also carried out internal audits to test the robustness of procedures and consistency of interpretation across the country. These actions have improved the reliability and accuracy of data reporting but there are some areas where further improvements are still required. Areas of particular concern are highlighted in this Return.

Regulatory Accounts

The regulatory reporting regime includes a requirement to prepare a set of Regulatory Accounts for 2001/02. This is a new requirement compared with last year and is covered by Licence Condition 22. The purpose of the new Regulatory Accounts is to report information that is relevant to setting access charges and which allows Railtrack's financial performance to be monitored, against assumptions made by the Regulator at the last periodic review.

The Regulatory Accounts for 2001/02 are not included in this Annual Return but will be submitted to the Regulator in a separate report. They will include information on the expenditure incurred in 2001/02, which we propose to log-up as enhancement expenditure.

Section I – Operational Performance

Delays to train journeys experienced by passenger and freight companies are broken down into Railtrack-caused delays and those caused by train operators. Those attributable to Railtrack typically relate to infrastructure, timetabling and operation of the network or external events. Those attributable to train operators typically relate to train operations, fleet reliability, or problems with train crew resources. At the end of 2001/02 approximately 50% of all delays to passenger trains were attributable to Railtrack. This Annual Return provides data on Railtrack-caused delays only. Figures are presented for 2001/02 in delay minutes and in minutes delay per 100 train kilometres, with disaggregated results split down by cause, by Railtrack Zone and into delays affecting passenger and freight trains. In addition, the number of performance incidents in asset related categories is shown. These incidents are recorded for the purpose of identifying the cause and responsibility of delays and cancellations; while providing valuable management information on the causes of and trends in delays, they do not seek to represent a record of every single physical component or system failure occurring on the network.

Commentary

Delays attributable to Railtrack's infrastructure and network management improved by 23% to 13.4 million minutes. The reduction in delays to passenger trains was slightly lower at 21%, but when combined with an increase of some 2% in the kilometres run by trains, it left the key Regulatory Monitoring Target, of Railtrack-attributed delays per 100 train km, at 2.74 minutes (see Table 1). This level remains at nearly twice the regulatory target level. Delays to freight trains fell by 30% to 2.1 million minutes, also against an increase in train kilometres run (see Table 2).

The improvement in performance particularly reflected a 4.8m reduction (82%) in delay minutes due to precautionary speed restrictions imposed on the network for Gauge Corner Cracking (see category 104c in Table 3). There was also an improvement of 59% in delays due to severe weather.

Overall delays due to many other categories of delay increased compared to the previous year, reflecting primarily an increase in the average delay per incident. Track circuit and points failures accounted for 2.1 million delay minutes, an increase of 15% compared to 2000/01, and were the largest causes of non-track infrastructure delay. The number of performance incidents recorded for these two categories combined was nevertheless unchanged compared to the previous year (see table 12).

The delays by cause category across Railtrack's seven zones are shown in Tables 4 – 10. These highlight the particularly severe impact of track speed restrictions on the Midlands and London North Eastern zones relative to train kilometres run. The comparatively high risk of autumn leaf-fall and adhesion delay on Southern zone can also be observed.

The improvement in train performance during the first half of the year can be seen from Table 11, which shows delays by Zone split down into four-week periods. Delays fell from 1.3 million minutes in Period 1, to a low of 837,823 in Period 6. By contrast, Periods 8 and 9, commencing in mid-October, saw period totals of 1.2 million and 1.4 million minutes per period respectively, with the balance between these periods reflecting the impact of a relatively late autumn. By Period 11 (commencing January 2002), performance had recovered to a level similar to that prior to the autumn.

The trend in delays to passenger trains (relative to the train kilometres run) during the year, together with the previous year, is illustrated in Figure 1. This shows the impact of the disruption after the Hatfield accident and the subsequent recovery.

Summarised national data

| Table 1 National Delays to Passenger Train services (Regulatory Monitoring Target) | | | |
|------------------------------------------------------------------------------------|-------------|-------------|-------------|
| Railtrack-attributed delays | 1999/00 | 2000/01 | 2001/02 |
| Delay minutes ¹ | 6,357,365 | 14,328,453 | 11,289,684 |
| Train km ² | 411,783,295 | 402,794,776 | 412,176,056 |
| Delay minutes per 100 train km ³ | 1.54 | 3.56 | 2.74 |
| Regulatory Target in delay minutes per 100 train km | 1.54 | 1.42 | 1.39 |

1. The delay totals are based on all Railtrack-attributed delays affecting applicable passenger operators (main scheduled operators).
2. Train kilometres run for trains of applicable operators, excluding empty coaching stock movements.
3. Based on all delay minutes, divided by the train kilometres run, multiplied by 100.

Regulatory Target

The regulatory target for Railtrack-attributed delays is to achieve a reduction in passenger train delay minutes per 100 train kilometres of 2.5% each year of the control period. The starting point is the 2000/01 target that the Regulator set for a 7.8% reduction on the 1999/00 level of performance.

There is no regulatory target for delays to freight trains.

| Table 2 National Delays to Freight Train services | | | |
|---------------------------------------------------|------------|------------|------------|
| Railtrack-attributed delays | 1999/00 | 2000/01 | 2001/2002 |
| Delay minutes ¹ | 1,399,325 | 3,004,408 | 2,094,688 |
| Train km ² | 47,092,101 | 46,556,047 | 48,761,221 |
| Delay minutes per 100 train km ³ | 2.97 | 6.45 | 4.30 |

1. The delay totals are based on all Railtrack-attributed delays affecting applicable freight operators' services (which exclude certain industry services such as ballast trains).
2. Train kilometres run for trains of applicable operators' services.
3. Based on all delay minutes, divided by the train kilometres run, multiplied by 100.

Impact of the Train Protection and Warning System

The new Train Protection and Warning System (TPWS) currently being installed across the network will have an adverse affect on train delay, and we believe that it would be appropriate to exclude TPWS caused delays from the regulatory monitoring regime. The delay minutes for 2001/02 shown in Tables 1 and 2 include delays caused by TPWS of 24,047 minutes for passenger trains and 1,864 minutes for freight trains. We expect that as TPWS is rolled out over the next 18 months these delays will increase.

National data by delay category

Table 3 NATIONAL delays to passenger & freight trains by detailed cause category – 2001/02

| No. | Category | Passenger Train delay minutes | Passenger Train delay minutes per 100 train km | Freight Train delay minutes | Freight Train delay minutes per 100 train km | Combined Train delay minutes | Combined Train delay minutes per 100 train km |
|----------------------|-------------------------------------------------------|-------------------------------|------------------------------------------------|-----------------------------|----------------------------------------------|------------------------------|-----------------------------------------------|
| I01 | Points failures | 790,736 | 0.19 | 162,518 | 0.33 | 953,254 | 0.21 |
| I02 | Problems with trackside signs, TSR boards | 60,819 | 0.01 | 7,494 | 0.02 | 68,313 | 0.01 |
| I03 | Level crossing failures | 126,942 | 0.03 | 13,156 | 0.03 | 140,098 | 0.03 |
| I04A | TSRs due to condition of track | 718,444 | 0.17 | 287,136 | 0.59 | 1,005,580 | 0.22 |
| I04B | Broken rails/track faults | 837,779 | 0.20 | 192,593 | 0.39 | 1,030,372 | 0.22 |
| I04C | Gauge corner cracking | 825,405 | 0.20 | 163,186 | 0.33 | 988,591 | 0.21 |
| I05 | Lineside structure defects (inc. weather impact) | 262,254 | 0.06 | 68,275 | 0.14 | 330,529 | 0.07 |
| I06 | Other infrastructure | 394,519 | 0.10 | 76,344 | 0.16 | 470,863 | 0.10 |
| I07A | Possession over-run and related faults | 215,146 | 0.05 | 76,289 | 0.16 | 291,435 | 0.06 |
| I07B | Possession work left incomplete | 98,619 | 0.02 | 14,654 | 0.03 | 113,273 | 0.02 |
| I08 | Mishap - infrastructure causes | 47,723 | 0.01 | 8,053 | 0.02 | 55,776 | 0.01 |
| I09 | Animals on line | 158,208 | 0.04 | 15,354 | 0.03 | 173,562 | 0.04 |
| I10 | External weather impact | 347,655 | 0.08 | 53,542 | 0.11 | 401,197 | 0.09 |
| I11A | Wheel slip due to leaf fall | 123,787 | 0.03 | 6,931 | 0.01 | 130,718 | 0.03 |
| I11B | Vegetation management failure | 13,589 | 0.00 | 1,208 | 0.00 | 14,797 | 0.00 |
| I12 | Fires starting on Railtrack infrastructure | 62,992 | 0.02 | 2,163 | 0.00 | 65,155 | 0.01 |
| I50 | Railtrack share of industry leaf-fall/adhesion delays | 317,208 | 0.08 | 7,823 | 0.02 | 325,031 | 0.07 |
| 201 | Overhead line/Third rail faults | 350,302 | 0.08 | 53,211 | 0.11 | 403,513 | 0.09 |
| 301A | Signal failures | 416,673 | 0.10 | 47,059 | 0.10 | 463,732 | 0.10 |
| 301B | Track circuit failures | 1,059,123 | 0.26 | 120,659 | 0.25 | 1,179,782 | 0.26 |
| 302A | Signalling system & power supply failures | 400,414 | 0.10 | 73,102 | 0.15 | 473,516 | 0.10 |
| 302B | Other signal equipment failures | 70,465 | 0.02 | 17,976 | 0.04 | 88,441 | 0.02 |
| 303 | Telephone failures | 33,544 | 0.01 | 5,388 | 0.01 | 38,932 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 137,136 | 0.03 | 30,968 | 0.06 | 168,104 | 0.04 |
| 304A | Change of aspects-no fault found | 21,087 | 0.01 | 1,121 | 0.00 | 22,208 | 0.00 |
| 305 | Track circuit failures - leaf fall | 18,485 | 0.00 | 2,539 | 0.01 | 21,024 | 0.00 |
| 401 | Bridge strikes | 217,122 | 0.05 | 15,466 | 0.03 | 232,588 | 0.05 |
| 402 | External infrastructure damage - vandalism/theft | 359,627 | 0.09 | 44,081 | 0.09 | 403,708 | 0.09 |
| 403 | External level crossing/road incidents (not bridges) | 94,215 | 0.02 | 11,560 | 0.02 | 105,775 | 0.02 |
| 501 | Railtrack Production responsibility | 929,472 | 0.23 | 148,557 | 0.30 | 1,078,029 | 0.23 |
| 502A | Railtrack Commercial: train Planning | 360,069 | 0.09 | 178,861 | 0.37 | 538,930 | 0.12 |
| 502B | Railtrack Commercial responsibility: other | 40,692 | 0.01 | 12,886 | 0.03 | 53,578 | 0.01 |
| 502C | Railtrack Commercial: dispute take-back | 357,544 | 0.09 | 37,332 | 0.08 | 394,876 | 0.09 |
| 503 | External fatalities and trespass | 398,541 | 0.10 | 51,214 | 0.11 | 449,755 | 0.10 |
| 504 | External police on line/security alerts | 40,675 | 0.01 | 4,044 | 0.01 | 44,719 | 0.01 |
| 505 | External fires | 40,707 | 0.01 | 8,347 | 0.02 | 49,054 | 0.01 |
| 506 | External other | 125,757 | 0.03 | 22,095 | 0.05 | 147,852 | 0.03 |
| 601 | Unexplained | 416,209 | 0.10 | 51,503 | 0.11 | 467,712 | 0.10 |
| Total minutes | | 11,289,684 | 2.74 | 2,094,688 | 4.30 | 13,384,372 | 2.90 |
| Train km | | 412,176,056 | | 48,761,221 | | 460,937,277 | |

Zonal data by delay category

| Table 4 EAST ANGLIA delays to passenger & freight trains by detailed cause category – 2001/02 | | | |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------|---------------------------------------------|
| No | Category | Train delay minutes | Train delay minutes per 100 train km |
| 101 | Points failures | 99,584 | 0.22 |
| 102 | Problems with trackside signs, TSR boards | 5,083 | 0.01 |
| 103 | Level crossing failures | 19,086 | 0.04 |
| 104A | TSRs due to condition of track | 9,419 | 0.02 |
| 104B | Broken rails/track faults | 96,394 | 0.21 |
| 104C | Gauge corner cracking | 58,637 | 0.13 |
| 105 | Lineside structure defects | 4,070 | 0.01 |
| 106 | Other infrastructure | 21,307 | 0.05 |
| 107A | Possession over-run and related faults | 27,006 | 0.06 |
| 107B | Possession work left incomplete | 6,437 | 0.01 |
| 108 | Mishap - infrastructure causes | 4,998 | 0.01 |
| 109 | Animals on line | 6,854 | 0.01 |
| 110 | External weather impact | 47,752 | 0.10 |
| 111A | Wheel slip due to leaf fall | 16,562 | 0.04 |
| 111B | Vegetation management failure | 2,358 | 0.01 |
| 112 | Fires starting on Railtrack infrastructure | 744 | 0.00 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 23,569 | 0.05 |
| 201 | Overhead line/Third rail faults | 44,369 | 0.10 |
| 301A | Signal failures | 37,316 | 0.08 |
| 301B | Track circuit failures | 106,858 | 0.23 |
| 302A | Signalling system & power supply failures | 52,251 | 0.11 |
| 302B | Other signal equipment failures | 6,636 | 0.01 |
| 303 | Telephone failures | 5,347 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 11,243 | 0.02 |
| 304A | Change of aspects-no fault found | 546 | 0.00 |
| 305 | Track circuit failures - leaf fall | 320 | 0.00 |
| 401 | Bridge strikes | 21,192 | 0.05 |
| 402 | External infrastructure damage - vandalism/theft | 23,082 | 0.05 |
| 403 | External level crossing/road incidents (not bridges) | 19,801 | 0.04 |
| 501 | Railtrack Production responsibility | 149,120 | 0.32 |
| 502A | Railtrack Commercial: train Planning | 29,010 | 0.06 |
| 502B | Railtrack Commercial responsibility: other | 2,311 | 0.01 |
| 502C | Railtrack Commercial: dispute take-back | 20,917 | 0.05 |
| 503 | External fatalities and trespass | 33,234 | 0.07 |
| 504 | External police on line/security alerts | 2,722 | 0.01 |
| 505 | External fires | 8,669 | 0.02 |
| 506 | External other | 19,876 | 0.04 |
| 601 | Unexplained | 9,791 | 0.02 |
| Total minutes | | 1,054,469 | 2.29 |
| Train km | | 46,015,022 | |

Table 5 GREAT WESTERN delays to passenger & freight trains by detailed cause category-2001/02

| No. | Category | Train delay minutes | Train delay minutes per 100 train km |
|----------------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 152,920 | 0.24 |
| 102 | Problems with trackside signs, TSR boards | 7,685 | 0.01 |
| 103 | Level crossing failures | 16,061 | 0.02 |
| 104A | TSRs due to condition of track | 69,431 | 0.11 |
| 104B | Broken rails/track faults | 182,068 | 0.28 |
| 104C | Gauge corner cracking | 162,809 | 0.25 |
| 105 | Lineside structure defects | 82,827 | 0.13 |
| 106 | Other infrastructure | 21,028 | 0.03 |
| 107A | Possession over-run and related faults | 46,581 | 0.07 |
| 107B | Possession work left incomplete | 12,432 | 0.02 |
| 108 | Mishap - infrastructure causes | 3,004 | 0.00 |
| 109 | Animals on line | 38,570 | 0.06 |
| 110 | External weather impact | 78,179 | 0.12 |
| 111A | Wheel slip due to leaf fall | 6,294 | 0.01 |
| 111B | Vegetation management failure | 1,773 | 0.00 |
| 112 | Fires starting on Railtrack infrastructure | 46 | 0.00 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 12,419 | 0.02 |
| 201 | Overhead line/Third rail faults | 8,156 | 0.01 |
| 301A | Signal failures | 76,928 | 0.12 |
| 301B | Track circuit failures | 201,688 | 0.31 |
| 302A | Signalling system & power supply failures | 55,988 | 0.09 |
| 302B | Other signal equipment failures | 20,888 | 0.03 |
| 303 | Telephone failures | 7,984 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 14,615 | 0.02 |
| 304A | Change of aspects-no fault found | 715 | 0.00 |
| 305 | Track circuit failures - leaf fall | 292 | 0.00 |
| 401 | Bridge strikes | 39,378 | 0.06 |
| 402 | External infrastructure damage - vandalism/theft | 54,116 | 0.08 |
| 403 | External level crossing/road incidents (not bridges) | 15,716 | 0.02 |
| 501 | Railtrack Production responsibility | 124,069 | 0.19 |
| 502A | Railtrack Commercial: train Planning | 131,687 | 0.20 |
| 502B | Railtrack Commercial responsibility: other | 3,445 | 0.01 |
| 502C | Railtrack Commercial: dispute take-back | 31,546 | 0.05 |
| 503 | External fatalities and trespass | 99,157 | 0.15 |
| 504 | External police on line/security alerts | 10,300 | 0.02 |
| 505 | External fires | 7,166 | 0.01 |
| 506 | External other | 28,376 | 0.04 |
| 601 | Unexplained | 54,620 | 0.08 |
| Total minutes | | 1,880,957 | 2.90 |
| Train km | | 64,909,087 | |

Table 6 LNE delays to passenger & freight trains by detailed cause category—2001/02

| No. | Category | Train delay minutes | Train delay minutes per 100 train km |
|----------------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 94,733 | 0.12 |
| 102 | Problems with trackside signs, TSR boards | 11,345 | 0.01 |
| 103 | Level crossing failures | 25,203 | 0.03 |
| 104A | TSRs due to condition of track | 474,913 | 0.62 |
| 104B | Broken rails/track faults | 157,401 | 0.21 |
| 104C | Gauge corner cracking | 296,860 | 0.39 |
| 105 | Lineside structure defects | 107,552 | 0.14 |
| 106 | Other infrastructure | 82,438 | 0.11 |
| 107A | Possession over-run and related faults | 31,717 | 0.04 |
| 107B | Possession work left incomplete | 13,213 | 0.02 |
| 108 | Mishap - infrastructure causes | 11,028 | 0.01 |
| 109 | Animals on line | 26,139 | 0.03 |
| 110 | External weather impact | 70,647 | 0.09 |
| 111A | Wheel slip due to leaf fall | 20,079 | 0.03 |
| 111B | Vegetation management failure | 1,061 | 0.00 |
| 112 | Fires starting on Railtrack infrastructure | 3,198 | 0.00 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 32,899 | 0.04 |
| 201 | Overhead line/Third rail faults | 75,888 | 0.10 |
| 301A | Signal failures | 60,300 | 0.08 |
| 301B | Track circuit failures | 93,285 | 0.12 |
| 302A | Signalling system & power supply failures | 68,571 | 0.09 |
| 302B | Other signal equipment failures | 19,736 | 0.03 |
| 303 | Telephone failures | 10,965 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 26,039 | 0.03 |
| 304A | Change of aspects-no fault found | 2,950 | 0.00 |
| 305 | Track circuit failures - leaf fall | 15,979 | 0.02 |
| 401 | Bridge strikes | 21,283 | 0.03 |
| 402 | External infrastructure damage - vandalism/theft | 61,856 | 0.08 |
| 403 | External level crossing/road incidents (not bridges) | 15,759 | 0.02 |
| 501 | Railtrack Production responsibility | 168,614 | 0.22 |
| 502A | Railtrack Commercial: train Planning | 69,138 | 0.09 |
| 502B | Railtrack Commercial responsibility: other | 8,713 | 0.01 |
| 502C | Railtrack Commercial: dispute take-back | 41,432 | 0.05 |
| 503 | External fatalities and trespass | 71,631 | 0.09 |
| 504 | External police on line/security alerts | 4,833 | 0.01 |
| 505 | External fires | 11,885 | 0.02 |
| 506 | External other | 25,555 | 0.03 |
| 601 | Unexplained | 107,353 | 0.14 |
| Total minutes | | 2,442,193 | 3.19 |
| Train km | | 76,553,385 | |

Table 7 MIDLANDS delays to passenger & freight trains by detailed cause category – 2001/02

| No | Category | Train delay minutes | Train delay minutes per 100 train km |
|-----------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 206,241 | 0.27 |
| 102 | Problems with trackside signs, TSR boards | 26,368 | 0.03 |
| 103 | Level crossing failures | 21,595 | 0.03 |
| 104A | TSRs due to condition of track | 305,605 | 0.40 |
| 104B | Broken rails/track faults | 228,257 | 0.30 |
| 104C | Gauge corner cracking | 301,114 | 0.40 |
| 105 | Lineside structure defects | 64,642 | 0.09 |
| 106 | Other infrastructure | 207,896 | 0.27 |
| 107A | Possession over-run and related faults | 88,574 | 0.12 |
| 107B | Possession work left incomplete | 44,256 | 0.06 |
| 108 | Mishap - infrastructure causes | 6,378 | 0.01 |
| 109 | Animals on line | 27,388 | 0.04 |
| 110 | External weather impact | 69,132 | 0.09 |
| 111A | Wheel slip due to leaf fall | 13,321 | 0.02 |
| 111B | Vegetation management failure | 2,389 | 0.00 |
| 112 | Fires starting on Railtrack infrastructure | 6,760 | 0.01 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 39,181 | 0.05 |
| 201 | Overhead line/Third rail faults | 109,117 | 0.14 |
| 301A | Signal failures | 103,845 | 0.14 |
| 301B | Track circuit failures | 217,950 | 0.29 |
| 302A | Signalling system & power supply failures | 118,141 | 0.16 |
| 302B | Other signal equipment failures | 16,987 | 0.02 |
| 303 | Telephone failures | 1,813 | 0.00 |
| 304 | Cable faults (signalling & telecoms) | 40,205 | 0.05 |
| 304A | Change of aspects-no fault found | 979 | 0.00 |
| 305 | Track circuit failures - leaf fall | 692 | 0.00 |
| 401 | Bridge strikes | 45,948 | 0.06 |
| 402 | External infrastructure damage - vandalism/theft | 73,161 | 0.10 |
| 403 | External level crossing/road incidents (not bridges) | 19,064 | 0.03 |
| 501 | Railtrack Production responsibility | 162,972 | 0.22 |
| 502A | Railtrack Commercial: train Planning | 104,980 | 0.14 |
| 502B | Railtrack Commercial responsibility: other | 30,310 | 0.04 |
| 502C | Railtrack Commercial: dispute take-back | 67,939 | 0.09 |
| 503 | External fatalities and trespass | 82,144 | 0.11 |
| 504 | External police on line/security alerts | 6,627 | 0.01 |
| 505 | External fires | 3,950 | 0.01 |
| 506 | External other | 21,080 | 0.03 |
| 601 | Unexplained | 49,359 | 0.07 |
| Total | | 2,936,360 | 3.88 |
| Train km | | 75,630,262 | |

Table 8 NORTH WEST delays to passenger & freight trains by detailed cause category – 2001/02

| No | Category | Train delay minutes | Train delay minutes per 100 train km |
|-----------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 97,400 | 0.19 |
| 102 | Problems with trackside signs, TSR boards | 7,889 | 0.02 |
| 103 | Level crossing failures | 23,935 | 0.05 |
| 104A | TSRs due to condition of track | 83,829 | 0.17 |
| 104B | Broken rails/track faults | 140,316 | 0.28 |
| 104C | Gauge corner cracking | 58,540 | 0.12 |
| 105 | Lineside structure defects | 35,205 | 0.07 |
| 106 | Other infrastructure | 63,107 | 0.13 |
| 107A | Possession over-run and related faults | 36,590 | 0.07 |
| 107B | Possession work left incomplete | 29,891 | 0.06 |
| 108 | Mishap - infrastructure causes | 516 | 0.00 |
| 109 | Animals on line | 29,787 | 0.06 |
| 110 | External weather impact | 33,422 | 0.07 |
| 111A | Wheel slip due to leaf fall | 15,839 | 0.03 |
| 111B | Vegetation management failure | 864 | 0.00 |
| 112 | Fires starting on Railtrack infrastructure | 4,329 | 0.01 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 55,325 | 0.11 |
| 201 | Overhead line/Third rail faults | 61,669 | 0.12 |
| 301A | Signal failures | 42,944 | 0.09 |
| 301B | Track circuit failures | 134,950 | 0.27 |
| 302A | Signalling system & power supply failures | 27,858 | 0.06 |
| 302B | Other signal equipment failures | 10,534 | 0.02 |
| 303 | Telephone failures | 5,921 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 29,456 | 0.06 |
| 304A | Change of aspects-no fault found | 1,706 | 0.00 |
| 305 | Track circuit failures - leaf fall | 378 | 0.00 |
| 401 | Bridge strikes | 27,376 | 0.05 |
| 402 | External infrastructure damage - vandalism/theft | 82,568 | 0.16 |
| 403 | External level crossing/road incidents (not bridges) | 13,735 | 0.03 |
| 501 | Railtrack Production responsibility | 81,094 | 0.16 |
| 502A | Railtrack Commercial: train Planning | 51,879 | 0.10 |
| 502B | Railtrack Commercial responsibility: other | 1,565 | 0.00 |
| 502C | Railtrack Commercial: dispute take-back | 47,048 | 0.09 |
| 503 | External fatalities and trespass | 50,351 | 0.10 |
| 504 | External police on line/security alerts | 5,671 | 0.01 |
| 505 | External fires | 5,098 | 0.01 |
| 506 | External other | 15,609 | 0.03 |
| 601 | Unexplained | 85,022 | 0.17 |
| Total | | 1,499,216 | 2.98 |
| Train km | | 50,343,836 | |

Table 9 SCOTLAND delays to passenger & freight trains by detailed cause category – 2001/02

| No | Category | Train delay minutes | Train delay minutes per 100 train km |
|-----------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 74,817 | 0.18 |
| 102 | Problems with trackside signs, TSR boards | 6,280 | 0.01 |
| 103 | Level crossing failures | 7,413 | 0.02 |
| 104A | TSRs due to condition of track | 61,705 | 0.15 |
| 104B | Broken rails/track faults | 72,260 | 0.17 |
| 104C | Gauge corner cracking | 106,993 | 0.25 |
| 105 | Lineside structure defects | 21,687 | 0.05 |
| 106 | Other infrastructure | 19,018 | 0.04 |
| 107A | Possession over-run and related faults | 15,652 | 0.04 |
| 107B | Possession work left incomplete | 4,099 | 0.01 |
| 108 | Mishap - infrastructure causes | 2,260 | 0.01 |
| 109 | Animals on line | 20,988 | 0.05 |
| 110 | External weather impact | 28,880 | 0.07 |
| 111A | Wheel slip due to leaf fall | 3,483 | 0.01 |
| 111B | Vegetation management failure | 943 | 0.00 |
| 112 | Fires starting on Railtrack infrastructure | 392 | 0.00 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 230 | 0.00 |
| 201 | Overhead line/Third rail faults | 54,247 | 0.13 |
| 301A | Signal failures | 43,262 | 0.10 |
| 301B | Track circuit failures | 85,633 | 0.20 |
| 302A | Signalling system & power supply failures | 22,820 | 0.05 |
| 302B | Other signal equipment failures | 4,576 | 0.01 |
| 303 | Telephone failures | 2,771 | 0.01 |
| 304 | Cable faults (signalling & telecoms) | 4,462 | 0.01 |
| 304A | Change of aspects-no fault found | 44 | 0.00 |
| 305 | Track circuit failures - leaf fall | 99 | 0.00 |
| 401 | Bridge strikes | 15,721 | 0.04 |
| 402 | External infrastructure damage - vandalism/theft | 26,920 | 0.06 |
| 403 | External level crossing/road incidents (not bridges) | 3,967 | 0.01 |
| 501 | Railtrack Production responsibility | 75,357 | 0.18 |
| 502A | Railtrack Commercial: train Planning | 34,407 | 0.08 |
| 502B | Railtrack Commercial responsibility: other | 2,395 | 0.01 |
| 502C | Railtrack Commercial: dispute take-back | 18,538 | 0.04 |
| 503 | External fatalities and trespass | 29,495 | 0.07 |
| 504 | External police on line/security alerts | 4,123 | 0.01 |
| 505 | External fires | 10,067 | 0.02 |
| 506 | External other | 14,471 | 0.03 |
| 601 | Unexplained | 31,988 | 0.08 |
| Total | | 932,463 | 2.19 |
| Train km | | 42,510,495 | |

Table 10 SOUTHERN delays to passenger & freight trains by detailed cause category – 2001/02

| No | Category | Train delay minutes | Train delay minutes per 100 train km |
|-----------------|-------------------------------------------------------|---------------------|--------------------------------------|
| 101 | Points failures | 227,559 | 0.22 |
| 102 | Problems with trackside signs, TSR boards | 3,663 | 0.00 |
| 103 | Level crossing failures | 26,805 | 0.03 |
| 104A | TSRs due to condition of track | 678 | 0.00 |
| 104B | Broken rails/track faults | 153,676 | 0.15 |
| 104C | Gauge corner cracking | 3,638 | 0.00 |
| 105 | Lineside structure defects | 14,546 | 0.01 |
| 106 | Other infrastructure | 56,069 | 0.05 |
| 107A | Possession over-run and related faults | 45,315 | 0.04 |
| 107B | Possession work left incomplete | 2,945 | 0.00 |
| 108 | Mishap - infrastructure causes | 27,592 | 0.03 |
| 109 | Animals on line | 23,836 | 0.02 |
| 110 | External weather impact | 73,185 | 0.07 |
| 111A | Wheel slip due to leaf fall | 55,140 | 0.05 |
| 111B | Vegetation management failure | 5,409 | 0.01 |
| 112 | Fires starting on Railtrack infrastructure | 49,686 | 0.05 |
| 150 | Railtrack share of industry leaf-fall/adhesion delays | 161,408 | 0.15 |
| 201 | Overhead line/Third rail faults | 50,067 | 0.05 |
| 301A | Signal failures | 99,137 | 0.09 |
| 301B | Track circuit failures | 339,418 | 0.32 |
| 302A | Signalling system & power supply failures | 127,887 | 0.12 |
| 302B | Other signal equipment failures | 9,084 | 0.01 |
| 303 | Telephone failures | 4,131 | 0.00 |
| 304 | Cable faults (signalling & telecoms) | 42,084 | 0.04 |
| 304A | Change of aspects-no fault found | 15,268 | 0.01 |
| 305 | Track circuit failures - leaf fall | 3,264 | 0.00 |
| 401 | Bridge strikes | 61,690 | 0.06 |
| 402 | External infrastructure damage - vandalism/theft | 82,005 | 0.08 |
| 403 | External level crossing/road incidents (not bridges) | 17,733 | 0.02 |
| 501 | Railtrack Production responsibility | 316,803 | 0.30 |
| 502A | Railtrack Commercial: train Planning | 117,829 | 0.11 |
| 502B | Railtrack Commercial responsibility: other | 4,839 | 0.00 |
| 502C | Railtrack Commercial: dispute take-back | 167,456 | 0.16 |
| 503 | External fatalities and trespass | 83,743 | 0.08 |
| 504 | External police on line/security alerts | 10,443 | 0.01 |
| 505 | External fires | 2,219 | 0.00 |
| 506 | External other | 22,885 | 0.02 |
| 601 | Unexplained | 129,579 | 0.12 |
| Total | | 2,638,714 | 2.51 |
| Train km | | 104,975,191 | |

Further breakdown of performance data

Table 11 Delay minutes to all trains split by zones and by four-weekly period – 2001/02

| Zone | East Anglia | Great Western | London North Eastern | Midlands | North West | Scotland | Southern | National Total |
|-------------------|-------------|---------------|----------------------|-----------|------------|----------|-----------|----------------|
| P1 | 79,635 | 255,741 | 248,632 | 353,825 | 122,933 | 77,000 | 169,853 | 1,307,619 |
| P2 | 86,188 | 166,975 | 228,752 | 329,640 | 124,023 | 76,841 | 170,573 | 1,182,992 |
| P3 | 84,463 | 135,958 | 214,954 | 241,116 | 106,090 | 55,628 | 180,536 | 1,018,745 |
| P4 | 70,553 | 198,878 | 190,540 | 223,866 | 145,548 | 64,862 | 229,280 | 1,123,527 |
| P5 | 86,170 | 137,902 | 171,912 | 226,553 | 98,605 | 62,612 | 190,665 | 974,419 |
| P6 | 65,156 | 111,672 | 151,985 | 184,047 | 80,588 | 68,805 | 175,570 | 837,823 |
| P7 | 65,666 | 117,430 | 155,972 | 202,652 | 92,228 | 86,477 | 226,435 | 946,860 |
| P8 | 108,712 | 132,226 | 188,764 | 240,454 | 151,316 | 88,277 | 251,138 | 1,160,887 |
| P9 | 128,448 | 173,588 | 224,419 | 249,949 | 150,779 | 76,079 | 371,109 | 1,374,371 |
| P10 | 69,576 | 98,306 | 169,095 | 162,039 | 102,296 | 69,540 | 206,250 | 877,102 |
| P11 | 72,647 | 120,820 | 153,823 | 172,863 | 96,739 | 85,042 | 145,482 | 847,416 |
| P12 | 66,357 | 125,670 | 170,794 | 181,655 | 115,482 | 53,822 | 154,115 | 867,895 |
| P13 | 71,005 | 105,791 | 172,444 | 167,701 | 112,589 | 67,478 | 167,708 | 864,716 |
| Year total | 1,054,576 | 1,880,957 | 2,442,086 | 2,936,360 | 1,499,216 | 932,463 | 2,638,714 | 13,384,372 |

Note:

- P1 Sunday 01/04/01 - Saturday 28/04/01
- P2 Sunday 29/04/01 - Saturday 26/05/01
- P3 Sunday 27/05/01 - Saturday 23/06/01
- P4 Sunday 24/06/01 - Saturday 21/07/01
- P5 Sunday 22/07/01 - Saturday 18/08/01
- P6 Sunday 19/08/01 - Saturday 15/09/01
- P7 Sunday 16/09/01 - Saturday 13/10/01
- P8 Sunday 14/10/01 - Saturday 10/11/01
- P9 Sunday 11/11/01 - Saturday 08/12/01
- P10 Sunday 09/12/01 - Saturday 05/01/02
- P11 Sunday 06/01/02 - Saturday 02/02/02
- P12 Sunday 03/02/02 - Saturday 02/03/02
- P13 Sunday 03/03/02 - Sunday 31/03/02

Figure 1 Delays to passenger trains by four-weekly period: 2000/01 – 2001/02

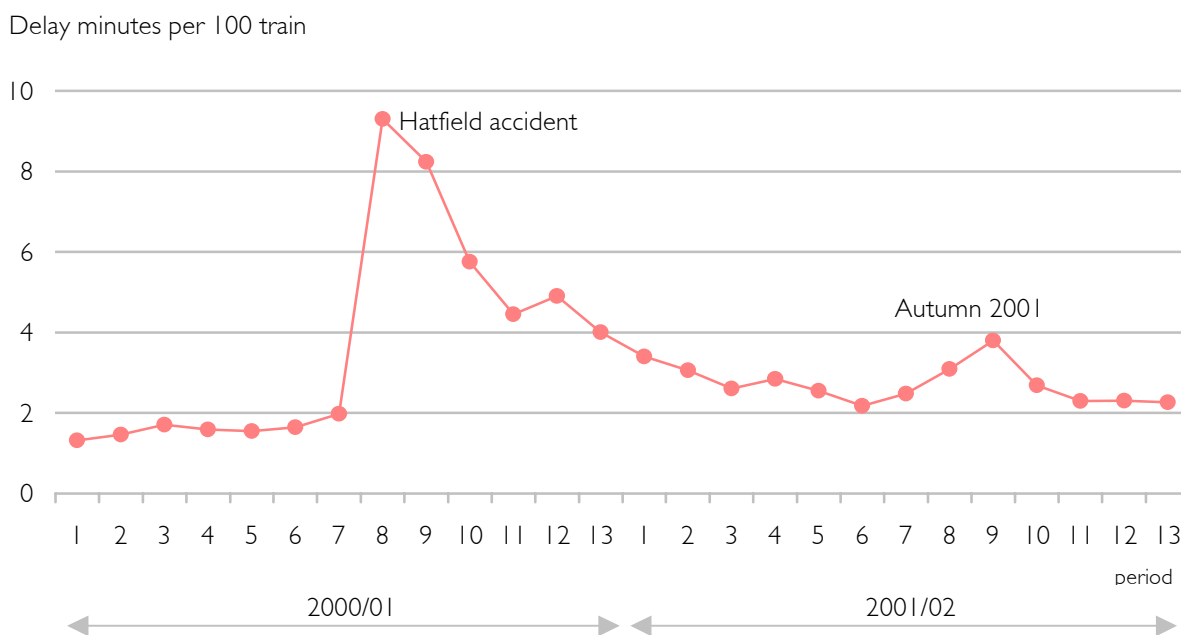


Table 12 Infrastructure incidents recorded for delay attribution

| No | Category | 2000/01 Number | 2001/02 Number |
|--------|--------------------------------------------------------------|-------------------|-------------------|
| 101 | Points failures | 10,460 | 10,253 |
| 103 | Level crossing failures | 2,837 | 2,825 |
| 104A&B | TSRs due to Condition of Track and Broken Rails/Track Faults | 7,848 | 9,021 |
| 104C | Gauge Corner Cracking | 6,625 | 3,140 |
| 105 | Lineside structure defects (including weather impact) | 1,615 | 1,087 |
| 106 | Other infrastructure | 4,904 | 5,293 |
| 108 | Mishap - infrastructure causes | 197 | 214 |
| 112 | Fires starting on Railtrack infrastructure | 289 | 426 |
| 201 | Overhead line/Third rail faults | 1,696 | 2,070 |
| 301A | Signal Failures | 8,376 | 9,254 |
| 301B | Track Circuit Failures | 10,661 | 10,924 |
| 302A | Signalling System & Power Supply Failures | 3,139 | 3,431 |
| 302B* | Other signal equipment failures | 1,385 | 2,012 |
| 303 | Telephone failures | 922 | 923 |
| 304 | Cable faults (signalling & telecoms) | 444 | 517 |
| 304A | Change of aspects-no fault found | 318 | 460 |
| 401 | Bridge strikes | 1,574 | 1,626 |

Note: incidents are recorded for the attribution of delays and cancellations. In a small number of cases more than one incident will be created for the same physical incident, to reflect different responsibilities for contractual delay attribution purposes.

*The increase recorded under category 302B above is largely accounted for by TPWS-related fault

Section 2 – Asset Condition and Serviceability

Number of Broken Rails

A broken rail is one which, before removal from the track, has a fracture through the full cross-section, or a piece broken out of it, rendering it unserviceable. This includes broken welds.

Results

| Table 13 Number of broken rails | | | | | |
|---------------------------------|------------|------------|------------|------------|------------|
| | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 |
| East Anglia | - | - | - | 63 | 34 |
| Great Western | - | - | - | 98 | 75 |
| London North Eastern | - | - | - | 161 | 125 |
| Midlands | - | - | - | 129 | 98 |
| North West | - | - | - | 110 | 83 |
| Scotland | - | - | - | 51 | 46 |
| Southern | - | - | - | 94 | 74 |
| Network total | 755 | 952 | 919 | 706 | 535 |
| Regulatory Target | | | | 765 | 735 |

Regulatory Target and Tolerance

The regulatory target is for a reduction in broken rails from 765 in 2000/01 to 615 in 2005/06. The regulatory targets are not split by zones.

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for the broken rail measure is assessed as $\pm 13.7\%$ of the target.

Commentary

Broken rails are those that fail in service with a fracture through the full cross-section or with a piece broken out rendering them unserviceable. These rails are subsequently removed from the track and a section of new rail inserted. Although few broken rails lead to derailments, all cases represent a safety risk, therefore the fewer the number the lower the risk.

In 1999 we introduced a major programme to reduce the number of broken rails following the sharp increase in 1998/99. The work included more frequent ultrasonic testing, more rail grinding, more stone blowing, increased re-railing, cold bolt hole expansion and additional re-ballasting. More Wheelchex equipment has also been introduced to measure wheel loads in traffic and so manage out high impact loads resulting from wheel flats and ‘out of round’ wheels. These actions have been effective.

There were 535 broken rails in 2001/02. This represents a 24% reduction on the previous year and was 27% below the national regulatory target.

Rail Defects

A defective rail is a rail that has any fault requiring remedial action (repair or replacement) to make it fit for purpose in accordance with RT/CE/S/103 and other Railtrack standards.

Results

| Table 14 Number of Isolated Rail Defects | | | | |
|------------------------------------------|----------------------|-----------------|--------------|-------------------------------|
| Type of defect | New defects detected | Defects removed | Weld repairs | Defects remaining at year end |
| Rail Ends | 3400 | 2895 | 117 | 1670 |
| Welds | 2654 | 2327 | 204 | 1873 |
| Midrail | 21338 | 15424 | 2635 | 25705 |
| S&C | 4758 | 2567 | 561 | 2773 |
| Unclassified | 1538 | 461 | 84 | 1637 |
| Total number | 33688 | 23674 | 3601 | 33658 |

| Table 15 Length of Continuous Rail Defects | | | | |
|--------------------------------------------|----------------------|------------------------|-------------------------|--------------------------------------|
| Type of defect | New defects detected | Defective rail removed | Defective rail grinding | Defective rail remaining at year end |
| Total length (yards) | 786,772 | 612,443 | 67,343 | 1,781,718 |
| Total length (km) | 719 | 560 | 62 | 1629 |

Regulatory Target

There is no regulatory target for this measure.

Commentary

Rail defect data is currently sourced from Maintenance Contractors who all store the information on different stand-alone systems. In spite of significant improvements made since last year's Annual Return, there are still logistical problems, which have resulted in gaps and inconsistencies within the network-wide data. There is no question that the contractors have the data, which they require to safely manage rail defects within their contract areas. Railtrack is addressing the quality of this information by modifying the Raildata mainframe system to accommodate all defect data.

The number of reported defects increased in 2001/02 for a number of reasons, including better clarity of definitions and a positive push by Railtrack to improve the quality of data. This increase is partly as a result of increasing average age of rail on the network but mainly due to rapid improvements in the techniques now being employed to detect defects at an early stage.

Railtrack therefore views the increase in the numbers of identified defects to be a positive trend, as it is an indication that our examination processes are effective in detecting defects and removing them before they result in a broken rail. This is borne out by the corresponding significant reduction in rail breaks.

Not all identified defects require immediate action to repair/ remove them. Remedial actions, which are specified for various types of defects, have been established over many years of experience, research, analysis of defect/ rail break history and the application of risk assessment.

Track Geometry (National SD data)

The purpose of this measure is to record the quality of the track asset by monitoring trends in track geometry. This section shows a national summary of the results and the next section shows data by speed band.

Track geometry is measured by track recording vehicles that record vertical and horizontal alignment. The difference between the actual rail position and the design position is expressed as a standard deviation in millimeters for each unit of length (eighth of a mile). Two filters are used to ensure that design changes in alignment (e.g. gradients and curves) are not measured as deficiencies in geometry. The two filters are of 35m and 70m wavelengths, with the 35m measures encompassing all track and the 70m measures only track with a linespeed of 80mph or more. The 2 alignment and 2 filter measures give 4 parameters. For each of these the percentage of track in the 50%, 90% and 100% standards are reported as given in the table below.

Results

| Table 16 Track Geometry (Standard Deviations) | | | | | | | | | | | | |
|-----------------------------------------------|---------------------------------|-------|-------|-----------------------------------------|-------|-------|---------------------------------|-------|-------|-----------------------------------------|-------|-------|
| Standards | 35m Top (Vertical deviation) | | | 35m Alignment (Horizontal deviation) | | | 70m Top (Vertical deviation) | | | 70m Alignment (Horizontal deviation) | | |
| | 50% | 90% | 100% | 50% | 90% | 100% | 50% | 90% | 100% | 50% | 90% | 100% |
| Target agreed with the Regulator | 64.6% | 90.3% | 98.3% | 70.9% | 91.6% | 97.4% | 62.5% | 92.8% | 97.8% | 64.7% | 91.9% | 97.3% |
| Recorded at March 2001 * | 61.3% | 89.0% | 96.9% | 72.4% | 92.7% | 96.1% | 60.7% | 92.2% | 95.4% | 76.1% | 95.0% | 96.6% |
| Recorded at March 2002 | 62.4% | 89.4% | 97.1% | 73.6% | 93.1% | 96.3% | 61.9% | 92.5% | 95.6% | 80.0% | 96.0% | 97.4% |

* The figures for March 2001 have been revised slightly compared to those shown previously in the 2001 Annual Return. This is for 2 reasons. Firstly, because alignment and gauge measurements taken between February 2001 and January 2002 were incorrectly suppressed where the track measuring vehicle speed was less than 30mph. All incorrectly suppressed data has been restored and the data re-analysed to give the results shown in the table above. Secondly, because line standard RT/CE/S/104 should apply to track with a linespeed of 80mph and above; previously this had been incorrectly applied to track with a linespeed of 75mph and above. We have corrected this error in the revised figures shown above.

Regulatory Targets and Tolerance

There are 2 elements to the track geometry targets agreed with the Regulator:

- to reduce as far as reasonably practicable the amount of track not yet achieving the 100% standard, as quantified by the target percentages stated in the table above.
- to ensure that the amount of track meeting the 50% and 90% standards is not less than the amounts which met those standards on 1 April 1994. The target percentages stated in the table above are the levels which should have been recorded by the end of 2001/02 (taking account of the recording lag of up to 12 months).

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for an average of the 12 measures was assessed as approximately ± 0.7 on the average measure as agreed by the Regulator in the final conclusions. Tolerances for each of the 12 individual regulatory targets set out in the table above have not been assessed; they would be significantly higher.

Commentary

Track geometry has improved steadily since 1996 despite the increase in traffic on the network (around 30% since 1995) and the consequential reduction in access for maintenance. In the last 18 months it has been company policy to focus on areas of poorest geometry, which has led to a significant reduction in isolated faults (level 2 exceedences) and the worst (super red) eighths of miles. This has driven down the risk of a catastrophic event due to derailment. The other track geometry priority has been to improve alignment, in the light of recent understanding of the impact of poor alignment on the propensity for initiation and growth of Gauge Corner Cracking (GCC).

The result of prioritising resources and limited funding in this way has meant that we have not been able to progress all aspects of general vertical geometry improvement to the original regulatory timescales, which were agreed some years ago, before the understanding of GCC emerged. Our progress on vertical geometry will depend on having the necessary funding available. Until we know what level of funding is available, we cannot realistically forecast when, or if, we will achieve the regulatory targets for vertical geometry. However, all aspects of track geometry are improving and the results for the year recently ended were particularly encouraging. In the short term, it remains our priority to focus current funding and resources on the reduction of catastrophic risk.

Track Geometry (Speed band data)

The purpose of this measure is to record the quality of the track asset by monitoring trends in track geometry. A national summary of the results was shown in the previous section, and this section shows data by speed band.

Detailed distribution data is available for Standard Deviation (SD) values in increments of 0.1mm from 0.0 to 9.9mm. All higher SD values are represented as 10.0mm and above. The number of these is exaggerated (as is probably also the case for higher values in the 0.0 to 9.9 range) by incorrect measurement of alignment at S&C and curves, caused by the presence of check-rails and other reasons. This distortion is particularly noticeable for the 15-40mph speed range.

Terminology

Line Standard RT/CE/S104 defines SD thresholds for each parameter to be achieved by 50%, 90% and 100% of track. Track achieving the 50% standard is termed Good, 50-90% standard is termed as Satisfactory, 90-100% is termed Poor and track failing the 100% standard is termed Very Poor.

Maximums higher than the 100% thresholds, for which immediate action is required, are also defined, and are referred to as "super-reds". Where a "super-red" is found to be genuine it is dealt with immediately, but its classification remains on the database until the track-section is re-measured. A large proportion of reported "super-reds" are applicable to low linespeed alignment, and many are false, as explained in the previous paragraph.

In many cases the difference between pairs of SD distribution curves (showing current compared to previous year) is barely discernible, hence the introduction of Overall SD. This is the SD of all deviations from design for the whole of the track under consideration, and its value for each parameter and linespeed range is displayed in the table below.

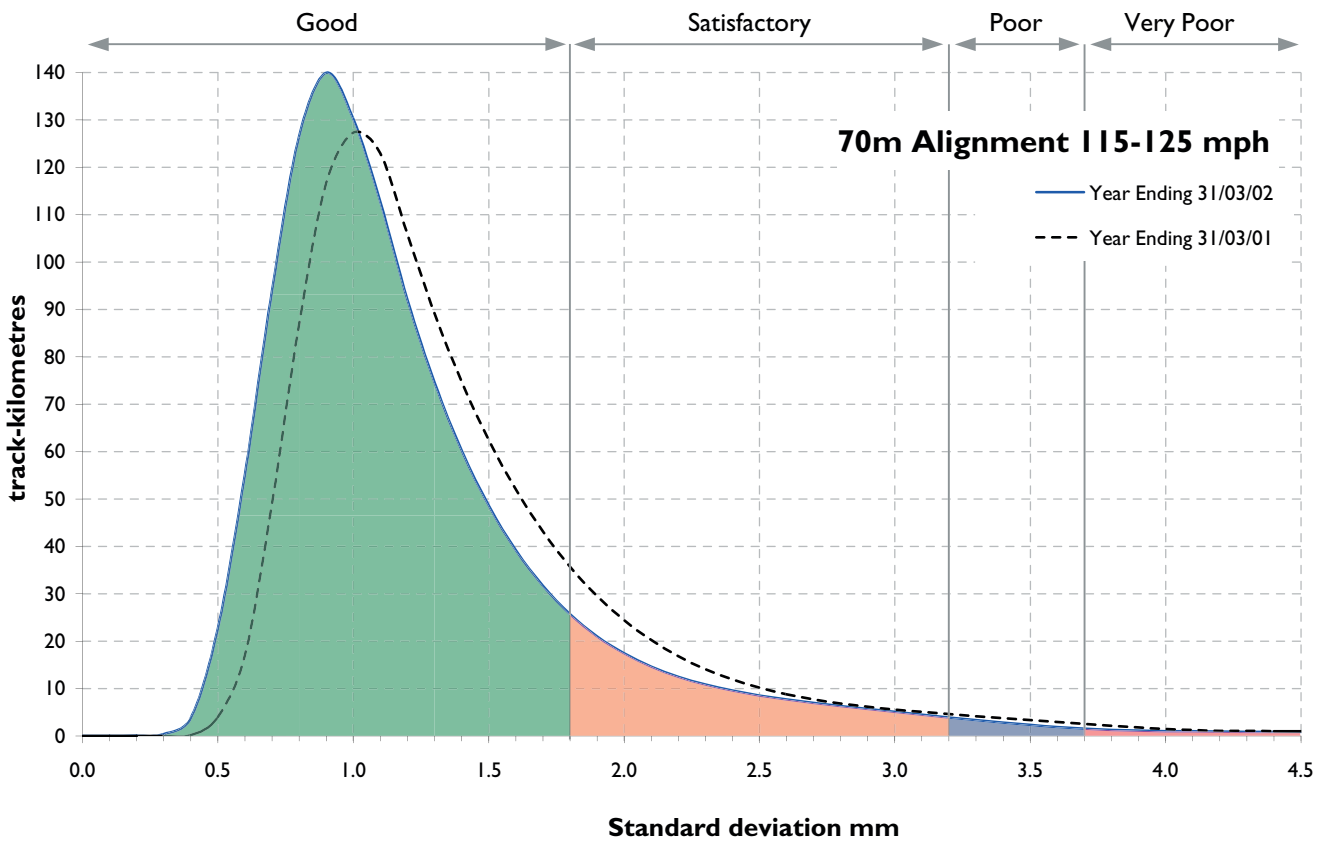
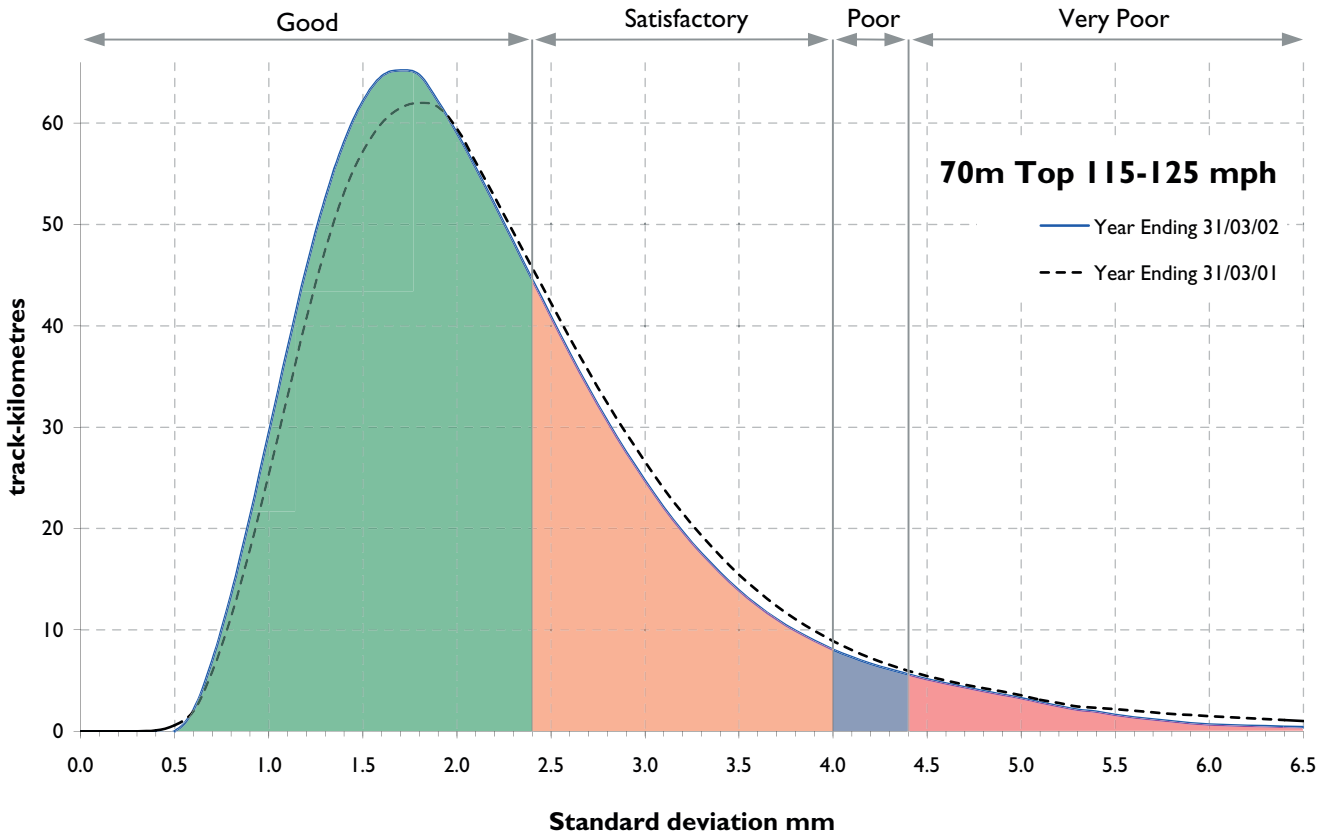
Year-on-year differences of less than 0.03 in global SD can probably not be regarded as significant, as these are within the level of accuracy of the measurement data.

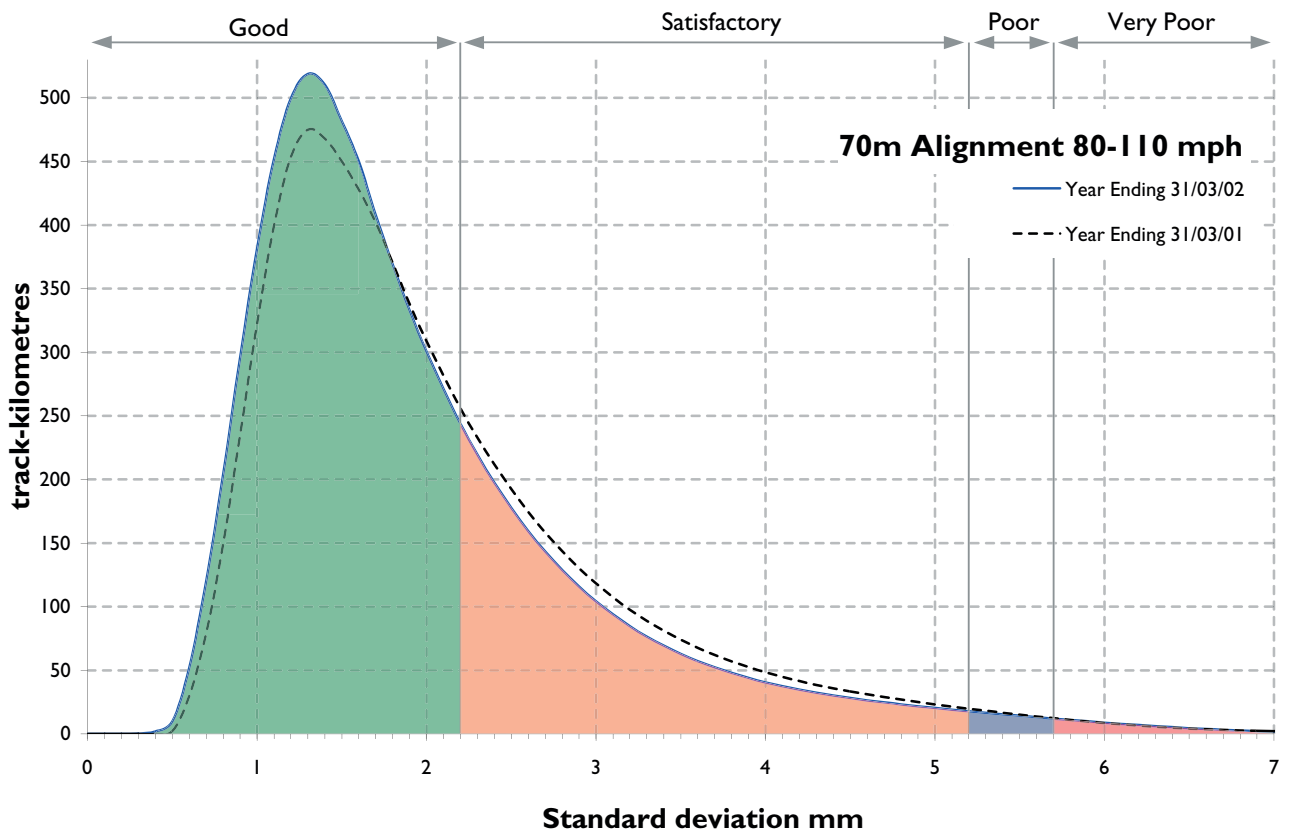
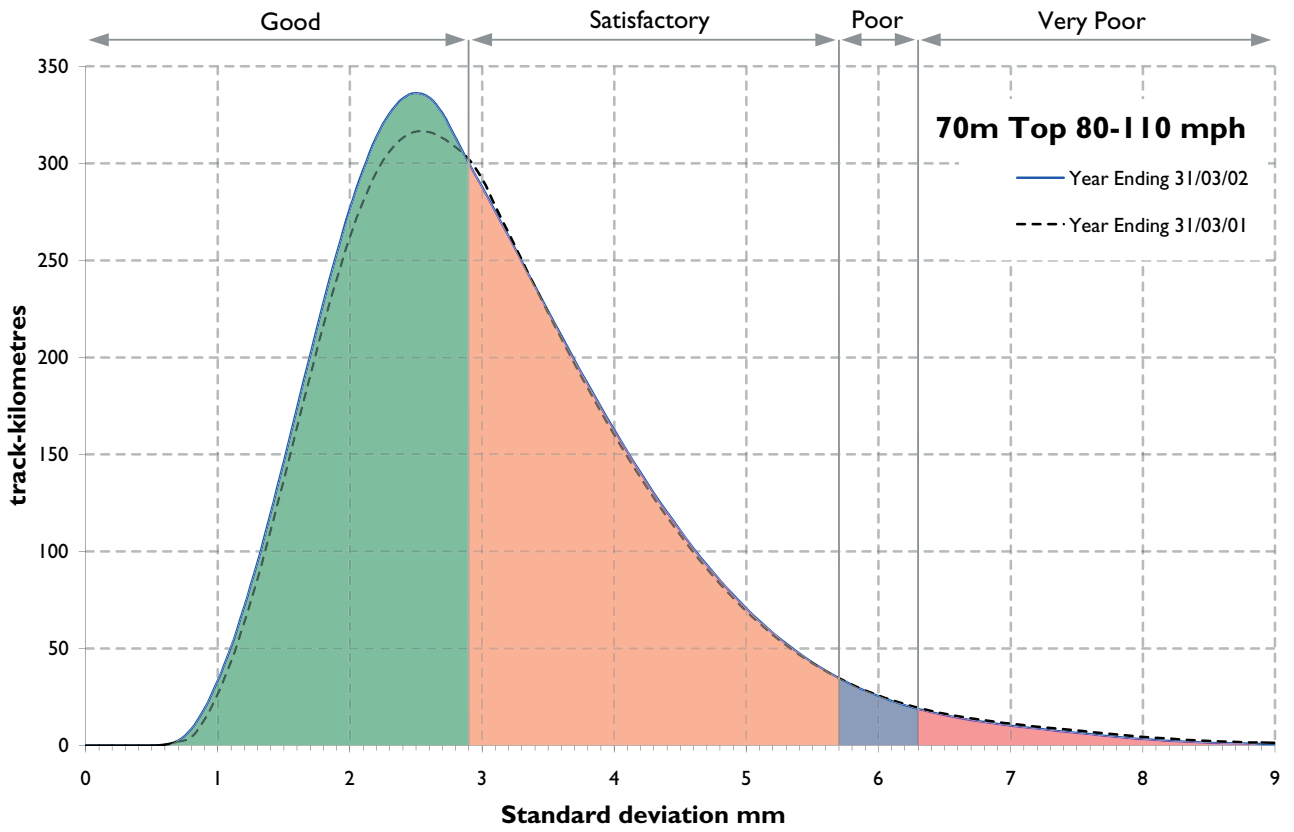
| Table 17 National track geometry summary | | | | |
|-------------------------------------------------|------------------------------|------------------------------|------------------------------|-----------------------------------------------|
| Track recording parameter | Linespeed range (mph) | Overall SD at 31.3.01 | Overall SD at 31.3.02 | Total track km in this linespeed range |
| 35m Top | 15-125 | 3.058 | 3.031 | 29,624 |
| | 15-40 | 4.286 | 4.216 | 3,761 |
| | 45-70 | 3.340 | 3.309 | 12,002 |
| | 75-110 | 2.542 | 2.513 | 12,609 |
| | 115-125 | 1.830 | 1.799 | 1,250 |
| 35m Line | 15-125 | 2.058 | 2.033 | 29,624 |
| | 15-40 | 4.274 | 4.331 | 3,761 |
| | 45-70 | 2.065 | 2.061 | 12,002 |
| | 75-110 | 1.284 | 1.229 | 12,609 |
| | 115-125 | 0.925 | 0.837 | 1,250 |
| 70m Top | 80-125 | 3.287 | 3.261 | 10,145 |
| | 80-110 | 3.386 | 3.363 | 8,894 |
| | 115-125 | 2.493 | 2.424 | 1,250 |
| 70m Line | 80-125 | 2.383 | 2.234 | 10,145 |
| | 80-110 | 2.477 | 2.326 | 8,894 |
| | 115-125 | 1.594 | 1.478 | 1,250 |

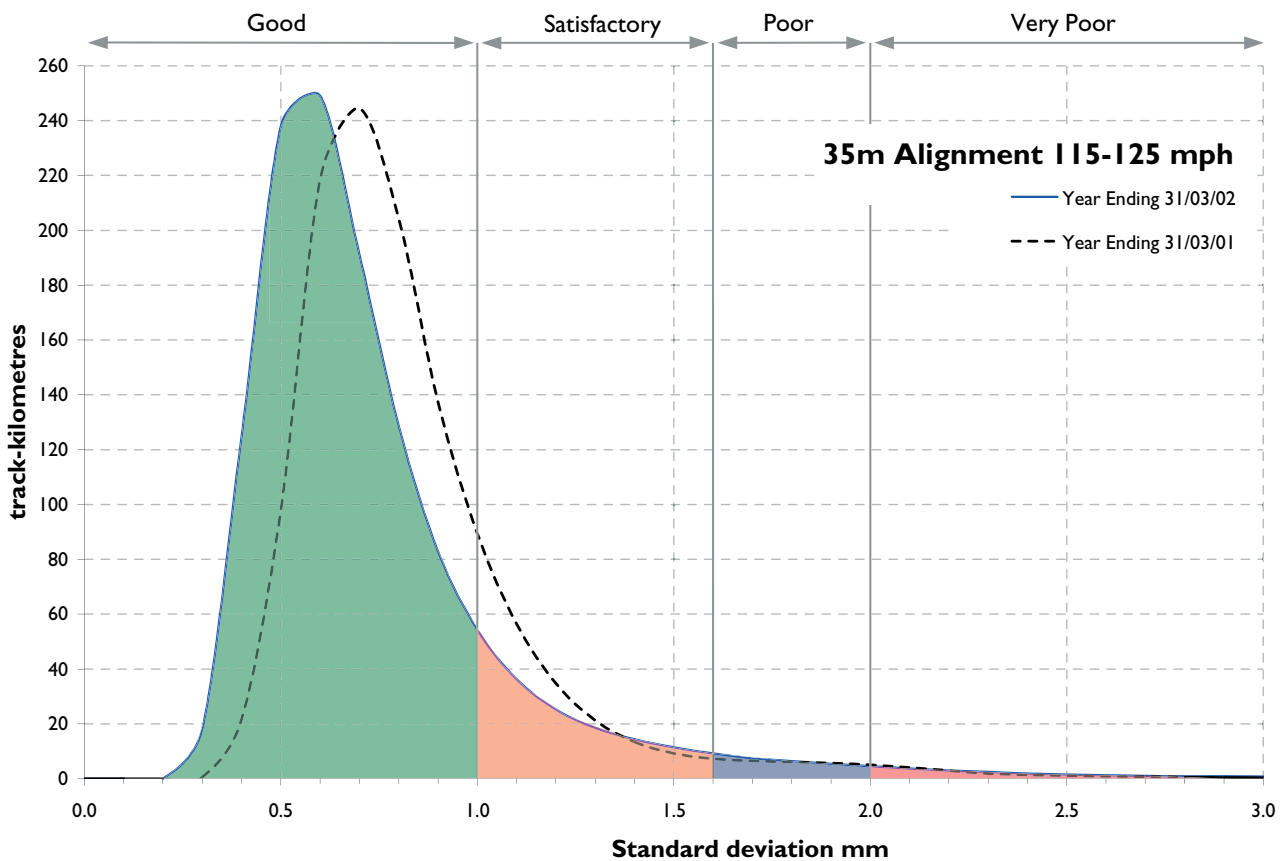
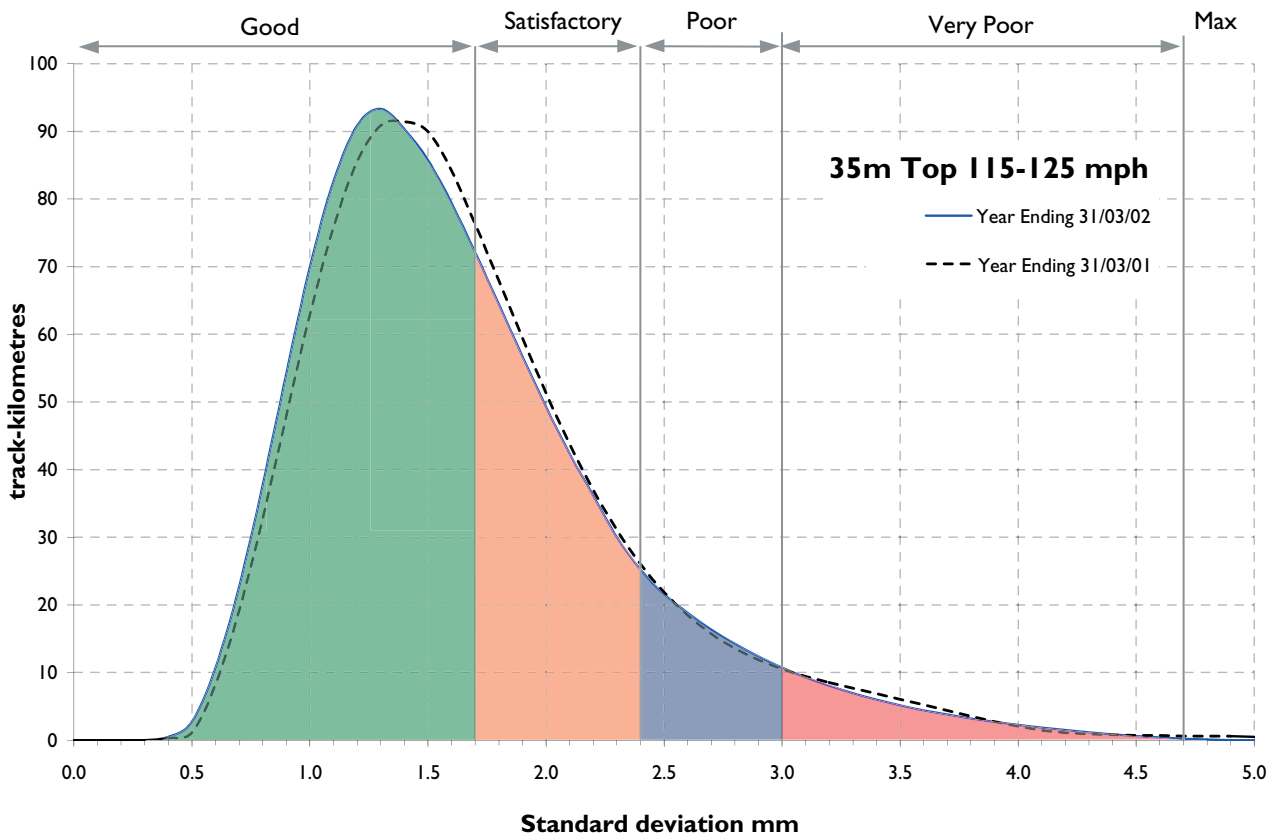
Commentary

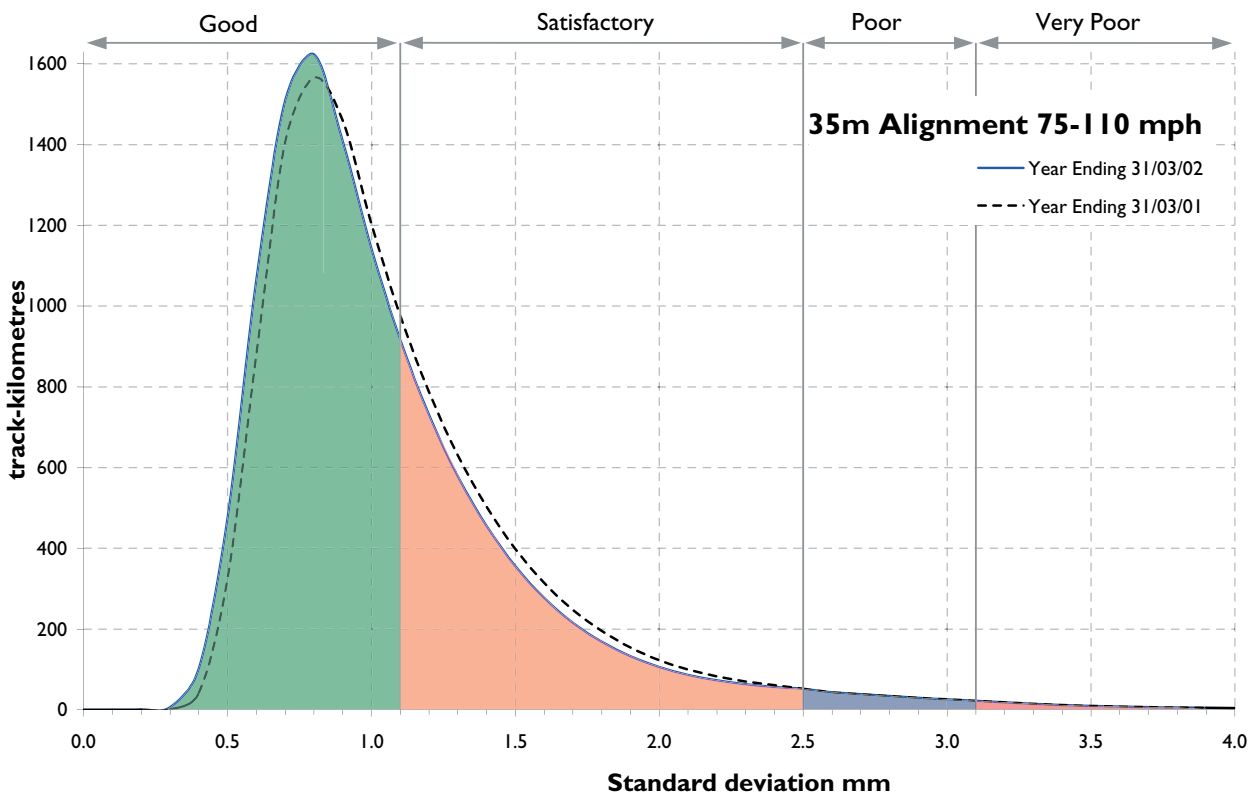
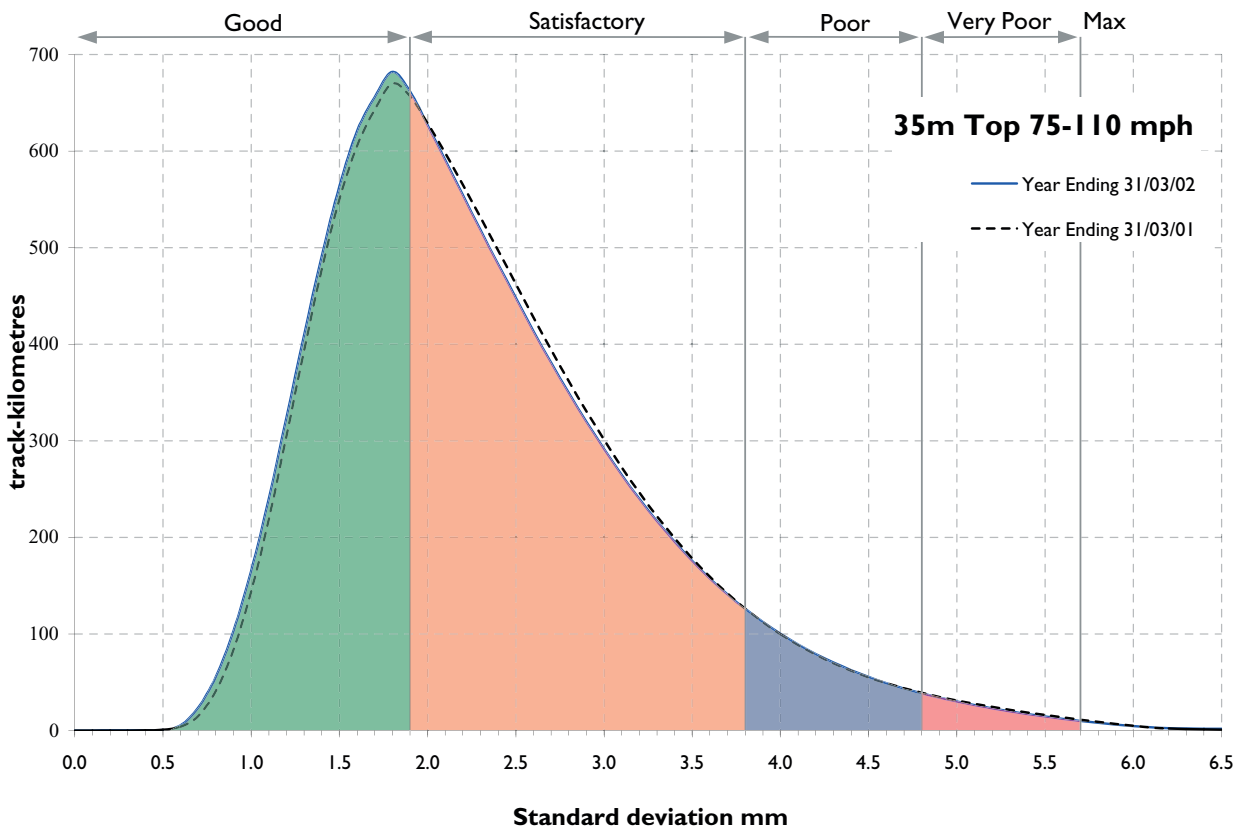
The only speed range/ parameter having a worse SD distribution in the current year compared to the previous year is 15-40 mph 35m alignment, although, as described earlier, the data in this range could be subject to measurement error.

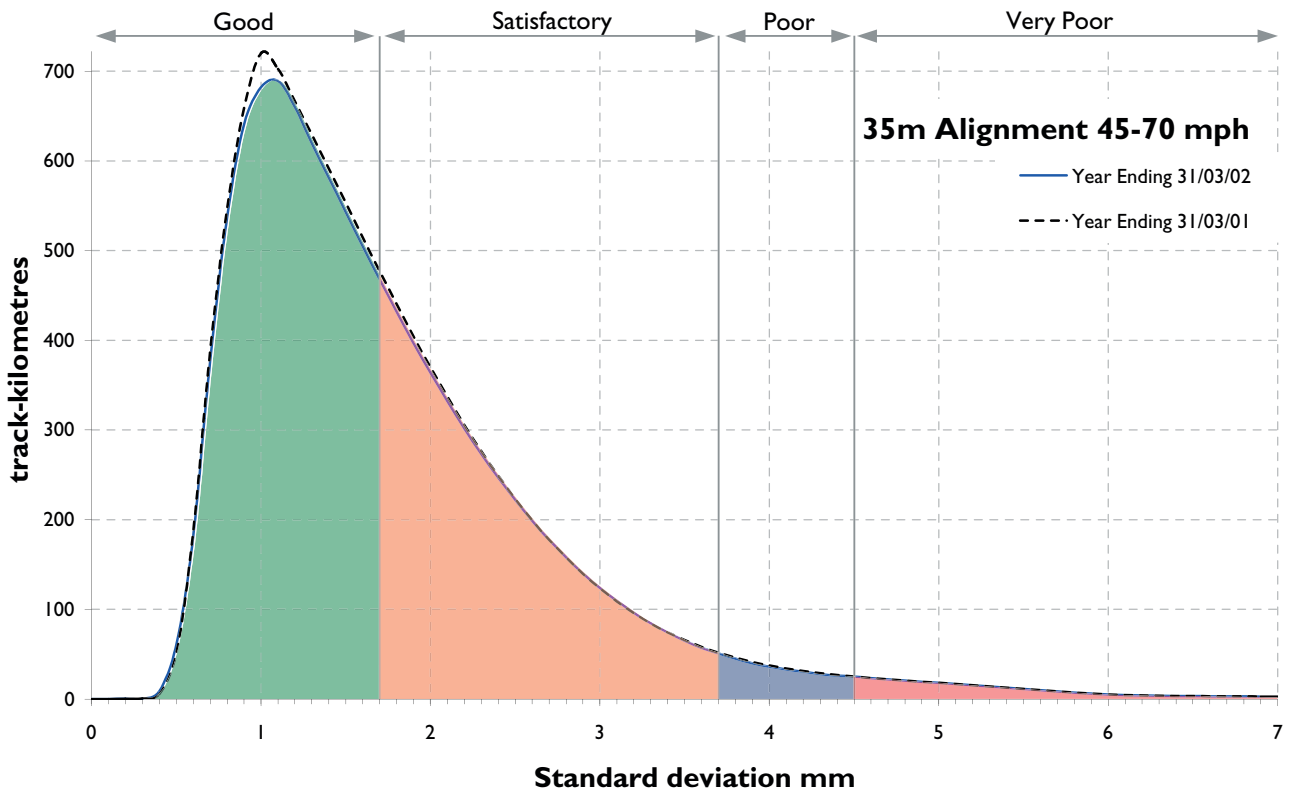
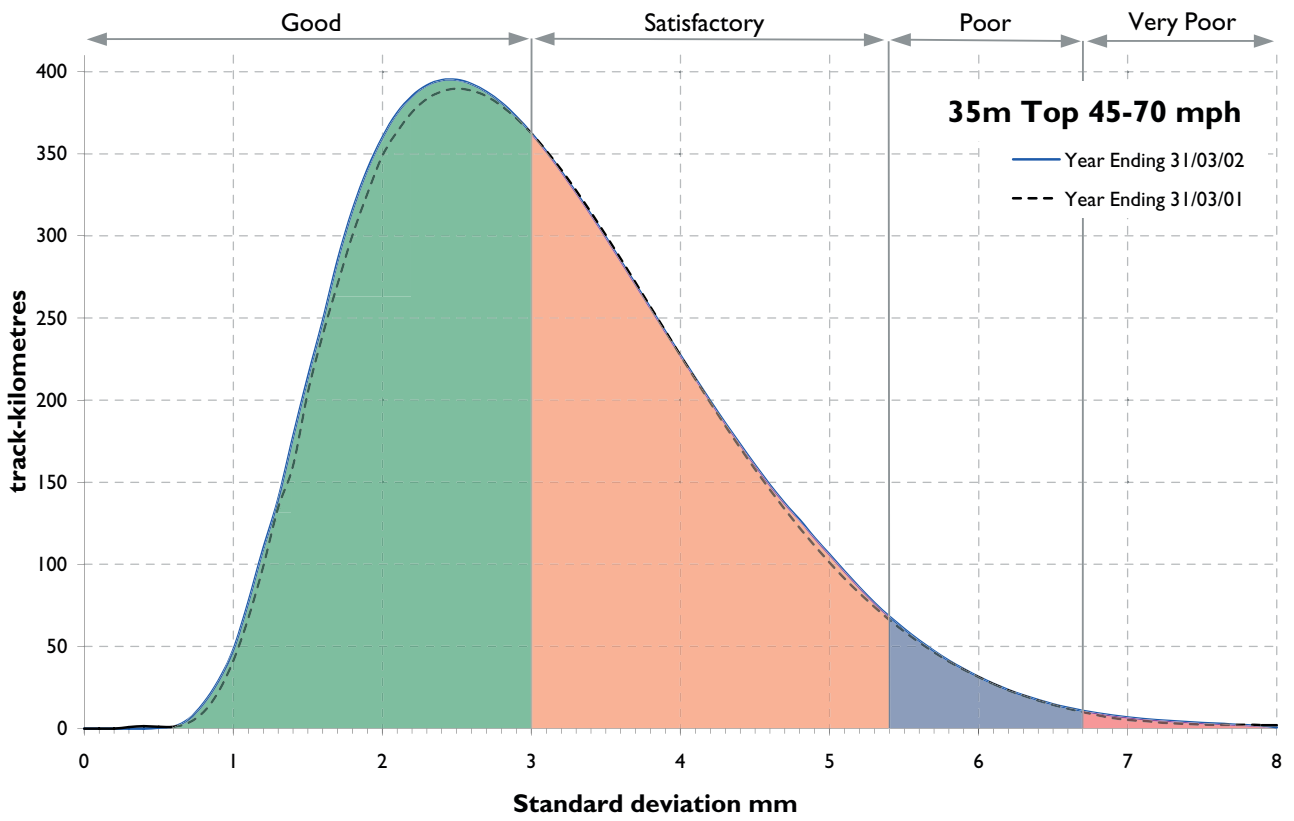
Detailed data for each of the track recording parameters above is presented graphically below:

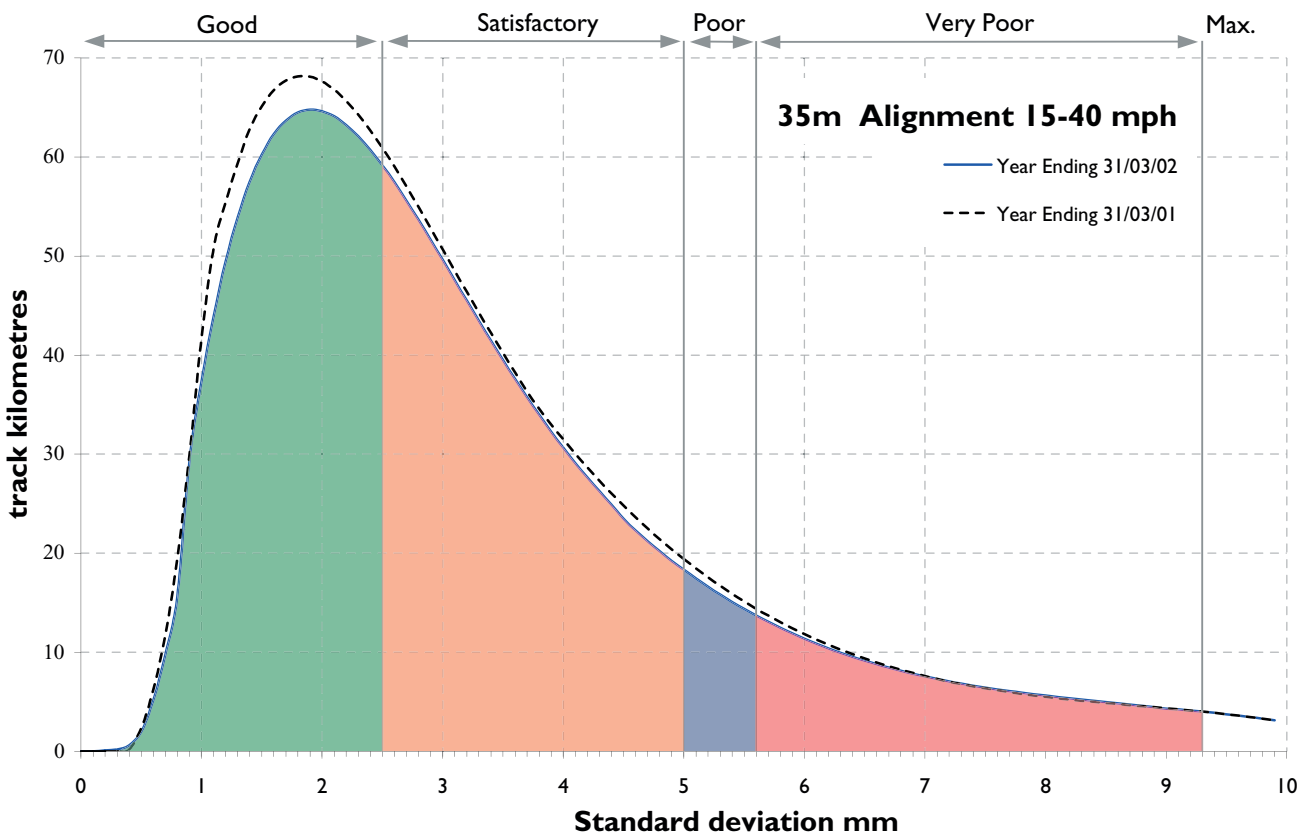
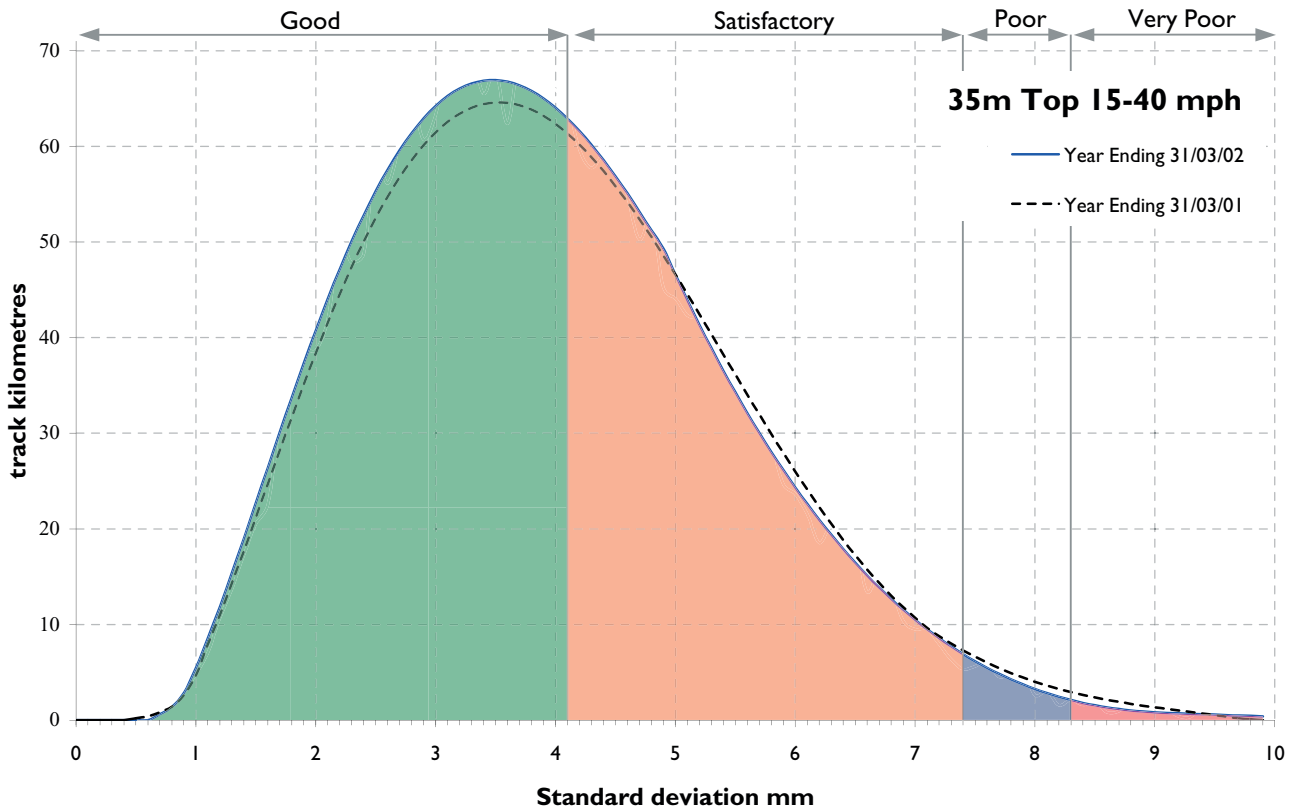












Track Geometry - Level 2 Exceedences

Track Geometry (Level 2 Exceedence) is a measure of the difference in the actual rail position from the 'ideal' position. It is based on the same set of measurements as are used for standard deviation discussed earlier. Maximum desirable values for the variance between the actual and ideal rail position are set in Railtrack Company Standards for various parameters (top, line, gauge and 3m twist), and for different line speeds and total annual tonnage. Values greater than the desirable variance are called Level 2 Exceedences. Data for this measure is reported as the number of Level 2 Exceedences per track mile (to include top, line, gauge and 3m twist). Level 2 Exceedences require remedial work within defined timescales specified in Railtrack Company Standards.

Results

| Table 18 Level 2 Exceedences per track mile | | |
|---------------------------------------------|--------------|--------------|
| Zone | 2000/01 * | 2001/02 |
| East Anglia | 1.863 | 1.504 |
| Great Western | 1.738 | 1.345 |
| London North Eastern | 1.660 | 1.225 |
| Midland | 1.745 | 1.263 |
| North Western | 2.480 | 1.770 |
| Scotland | 1.446 | 0.948 |
| Southern | 1.901 | 1.501 |
| Network total | 1.820 | 1.351 |

* The figures for 2000/01 have been revised slightly compared to those shown previously in the 2001 Annual Return. This is because alignment and gauge measurements taken between February 2001 and January 2002 were incorrectly suppressed where the track measuring vehicle speed was less than 30mph. All incorrectly suppressed data has been restored and the data re-analysed to give the results shown in the table above.

Regulatory Target and Tolerance

The regulatory target is for no deterioration from the network total reported for 2000/01 (1.820 per track mile).

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This "noise" is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for the level 2 exceedence measure is assessed as $\pm 7\%$ of the target.

Commentary

There has been a significant reduction in track geometry faults (level 2 exceedences) across the network and we have beaten the regulatory target by 26%.

Temporary Speed Restrictions

The regulatory measure for Temporary Speed Restrictions (TSRs) has changed. The previous definition of TSRs, published in the NMS, referred to speed restrictions imposed outside of Rules of the Route, but Railtrack and ORR agreed that this was not a good measure of the underlying asset condition and so a new measure was agreed.

This new measure, reported for the first time in this Annual Return, is a report of the cumulative number of TSRs due to condition of track, structures, and earthworks that have existed for a total 'time in place' of 4 weeks. In this case, 'TSRs' refers to all Emergency Speed Restrictions (ESRs) and TSRs published in the Weekly Operating Notices (WONs). The total 'time in place' is the time, to the nearest whole week, from when the speed restriction was first implemented to the time when the speed restriction is removed.

The Severity Factor for an individual speed restriction is calculated using the following formula:

$$\text{Severity Factor} = LT(1 - F)$$

where: L = the length of the TSR measured to 3 decimal places multiplied by the number of tracks to which it applies (miles)

T = the duration of the TSR (weeks)

$$F = \frac{\text{Restricted Speed}}{\text{Linespeed}}$$

Or, where there are differential speeds (e.g. unique freight and passenger speeds):

$$F = \left(\frac{\text{Lowest Restricted Speed}}{\text{Lowest Line Speed}} + \frac{\text{Highest Restricted Speed}}{\text{Highest Line Speed}} \right) / 2$$

If the length or speed changes during the life of a speed restriction, the total severity factor is calculated as the sum of the severity factors for each of the length or speed changes.

The severity factor is reported separately for each of condition of track, structures, and earthworks.

Speed restriction data is reported as cumulative values for the reporting year. Therefore, TSRs imposed prior to the start of the reporting year will be considered to have a date imposed equal to the start date for the reporting year. Similarly, TSRs remaining at the end of the reporting year will be considered as having a date removed equal to the end date for the reporting year. The Railtrack reporting year begins on 1 April and ends on 31 March, each reporting year.

Results

| Table 19 Track TSRs | | |
|----------------------|-----------------------------------|---------------------------|
| | 2001/02 cumulative No. of TSRs | 2001/02 Severity Score |
| East Anglia | 127 | 465 |
| Great Western | 229 | 1051 |
| London North Eastern | 331 | 2390 |
| Midlands | 310 | 2294 |
| North West | 129 | 958 |
| Scotland | 171 | 265 |
| Southern | 57 | 94 |
| Network total | 1354 | 7517 |

| Table 20 Structures TSRs | | |
|---------------------------------|-------------------------------------------|-----------------------------------|
| | 2001/02 cumulative No. of TSRs | 2001/02 Severity Score |
| East Anglia | 4 | 6 |
| Great Western | 16 | 27 |
| London North Eastern | 19 | 29 |
| Midlands | 15 | 28 |
| North West | 15 | 7 |
| Scotland | 7 | 2 |
| Southern | 3 | 109 |
| Network total | 79 | 208 |

| Table 21 Earthworks TSRs | | |
|---------------------------------|-------------------------------------------|-----------------------------------|
| | 2001/02 cumulative No. of TSRs | 2001/02 Severity Score |
| East Anglia | 2 | 7 |
| Great Western | 31 | 112 |
| London North Eastern | 19 | 80 |
| Midlands | 18 | 57 |
| North West | 6 | 19 |
| Scotland | 6 | 7 |
| Southern | 17 | 22 |
| Network total | 99 | 304 |

Regulatory Target

The Regulator has not set a target for this measure so there is no disincentive to applying a speed restriction when it is judged to be necessary on safety grounds.

Commentary

Over the past reporting year, a decline has been seen in the number of speed restrictions. Following the Hatfield accident, a large number of speed restrictions were initiated at suspect GCC sites. The rail recovery program has reduced these numbers greatly and further reductions may be expected for the 2002/2003 reporting year.

The TSR system audit has been completed, with a third party group performing an audit of the process and data quality for each of the reporting Zones/Regions and Headquarters. The auditors, who performed the audit last year, have noted a marked improvement in data quality and method as compared to the initial periods of data reporting. Some system issues have been identified and will be addressed in the next phase of the TSR project plan.

Slope Failures Causing Derailment

This measure reports details of the annual number of embankment or cutting failures causing a passenger or freight train derailment on Running Lines.

Results

| Table 22 Slope failures causing derailment | | | |
|--------------------------------------------|----------|----------|---------------------|
| Zone | Date | Location | Description |
| Scotland | 20/10/01 | Kinghorn | Rockfall in cutting |

Commentary

There was only one slope failure causing a derailment in 2001/02. In 2000/01 there were three.

Bridge Condition Index

The bridge condition grade is a measure from 1 to 5 of the condition of bridges, with 1 representing good condition and 5 poor condition. Each bridge is graded from a Structures Condition Marking Index (SCMI) value determined using the scoring tool set out in the SCMI handbook. The SCMI process is a marking methodology that grades the condition of each bridge on a 1-100 scale and involves defining the elements of the bridge and determines the extent and severity of any defect in each of the elements.

Results

The reported measure consists of the number of bridge spans examined that fall into each of the 5 condition grades.

| Table 23 Bridge condition index | | | | |
|----------------------------------------|------------------------------|---------------------------------|------------------------------------------------|--|
| Bridge condition grade | Equivalent SCMI value | 2000/01 No. of spans | 2000-02 two-year total No. of spans | |
| 1 | 80-100 | 141 | 481 | |
| 2 | 60-79 | 648 | 1463 | |
| 3 | 40-59 | 210 | 459 | |
| 4 | 20-39 | 16 | 32 | |
| 5 | 1-19 | 0 | 1 | |
| Total number examined | | 1,015 | 2,436 | |
| Average condition grade | | 2.1 | 2.0 | |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for the bridge condition index is assessed as ± 0.1 on the target.

Commentary

Data reported for 2002 includes a sample of 1,421 under and over bridges newly examined during 2001/02 in all zones/regions.

A sample audit of 162 of these 1,421 bridges marked by Structures Examination Contract (SEC) staff was undertaken by the same team of experienced bridge engineers used last year to ensure consistency and validate the results in all zones/regions. Only 37% of the audited scores were within the variability expected from the system. This has been identified as unacceptable even allowing for recently introduced and trained staff on some zones. In order to rectify the situation all results for 2001/2 are under review and further training and coaching to SEC staff has been given.

The planned target number of bridges to undergo a detailed examination and SCMI marking during 2001/2 was 5605 this represents around 1/6th of the bridge stock. The shortfall in the return figure to this target arises due to the timescales to process the site data, produce the report and SEC to review/check content before submission to Railtrack to input into the SCMI tool to give the score. This additional data will be available during 2002/3.

Signalling Failures

This measure reports the total number of signalling failures causing a cumulative total train delay of more than 10 minutes per incident.

Results

| Table 24 Number of Signalling Failures | | |
|----------------------------------------|---------------------|---------------------|
| Zone | 2000/01 (Number) | 2001/02 (Number) |
| East Anglia | 2,005 | 2,243 |
| Great Western | 3,205 | 3,776 |
| London North Eastern | 4,087 | 4,640 |
| Midland | 5,431 | 5,428 |
| North Western | 2,822 | 3,426 |
| Scotland | 2,578 | 3,025 |
| Southern | 4,978 | 5,367 |
| Network total | 25,106 | 27,905 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from the network total reported for 2000/01 (25,106).

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for signalling failures is assessed as $\pm 7.3\%$ of the target.

Commentary

The 11% increase in signalling failures causing a cumulative delay of more than 10 minutes per incident is outside the statistical tolerance of $\pm 7.3\%$. The main reason for this is due to a 17% increase in the average delay per incident rather than any significant increase in the number of signalling failures. We believe that the increase in delay per incident is due to changes in operating environment post Ladbroke Grove and Hatfield i.e. precautionary speed restrictions, more cautious driving styles and difficulty in restoring normal timetable following an incident. The network is also operating closer to full capacity and hence the knock-on impact of an individual delay rapidly compounds.

Signalling Condition Index

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

Results

| Table 25 Signalling Condition Index | | | | |
|-------------------------------------|----------------------------------------|---------------------------------------------|------------|--------------------------------------------------------------------|
| Condition grade | Observed nominal residual life (years) | No. of interlocking areas in condition band | 2000/01 | 2000-02 two year total No. of interlocking areas in condition band |
| 1 | >20 | | 0 | 31 |
| 2 | 10-20 | | 441 | 671 |
| 3 | 3-10 | | 162 | 262 |
| 4 | <3 | | 27 | 79 |
| 5 | At end of life | | 0 | 0 |
| Total number assessed | | | 630 | 1,043 |
| Average condition grade | | | 2.3 | 2.4 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established during the second control period once a sufficient sample size is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This "noise" is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for the signalling condition index is assessed as ± 0.1 on the target.

Commentary

Over 45% of interlocking areas were assessed by 01/04/02, and 100% will be achieved by end of control period 2.

In addition, a further 276 interlockings (56 grade 2, 194 grade 3 and 26 grade 4) have been assessed using the older SICA 2B method. These are scheduled for re-assessment by primary/secondary SICA before the end of the control period. At the moment Railtrack are not including SICA 2B results in returns to the Rail Regulator. Re-signalling work during 2001/02 has removed a small number of assessments (6) reported last year.

The average condition is computed from the most recent assessment for each asset. On a 5 yearly cycle of assessments data used will be up to 5 years old. For assets with very long lifetimes this is considered to be a better approach than taking a more recent, much smaller, sample.

To arrive at the results we used 'Primary SICA', a newly developed simpler version of the well-established SICA tool. While we are confident that it correctly represents the relative residual lives of signalling interlocking, comparison with the results of the Signalling Asset Maintenance Plan (SAMP), which underpinned our cost submission for control period 2, reveals apparent differences in the absolute values of residual lives. We intend to carry out some work to understand the detailed reasons for these.

Electrification Failures – Overhead Line

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

Results

| Table 26 Electrification Failures – Overhead Line | | |
|---------------------------------------------------|---------|---------|
| Measure | 2000/01 | 2001/02 |
| Number of incidents | 88 | 107 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from the number of incidents reported for 2000/01 (88).

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for overhead line failures is assessed as $\pm 28\%$ of the target.

Commentary

Although the reported number of failures in 2001/02 is more than the target, the increase is within the statistical tolerance for this measure. Nevertheless, we will continue to closely monitor the situation. The primary reasons for the increased number of incidents are as follows:-

- i) In the London North Eastern zone the overhead line equipment performance is representative of a system designed to a tight budget and operated to its limit, thereby compromising long-term reliability. Continued operation at its limit in terms of electrical loading and high train speeds, combined with an increase in traffic, is now taking its toll, leading to component failures.

Most significant weaknesses in the system are associated with:

- Corrosion and failure of aluminium catenary
- Fatigue failure of dropper and other in-span components
- Wind related dewirements due to inadequate windspeed design and/or erosion of track/OLE and pantograph tolerances.

2001/02 saw a rise in catastrophic failure of the aluminium catenary, particularly in the Great Northern suburban area. The catalyst for such failure is not yet fully understood, but such corrosion damage remains undetectable through normal ground level or non-intrusive inspection.

- ii) In the Midland/North West zones the key driver behind the increase in incidents over the previous year is the increasing amount of WCRM project work which has led to a number of failures due to commissioning problems.

A significant improvement has been recorded on East Anglia zone following a sustained package of overhead line initiatives delivered via maintenance possessions targeting the highest priority areas.

Electrification Failures – Conductor Rail

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

Results

| Table 27 Electrification Failures – Conductor Rail | | |
|----------------------------------------------------|---------|---------|
| Measure | 2000/01 | 2001/02 |
| Number of incidents | 45 | 30 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from the number of incidents reported for 2000/01 (45).

All infrastructure output measures are subject to statistical variability caused by random fluctuation and the accuracy of data measurement. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target; the assessment of the tolerance is based on an analysis of historical data. The statistical tolerance for Conductor rail failures is assessed as $\pm 47\%$ of the target.

Commentary

The improvement in performance in 2001/02 demonstrates the variation in the number of incidents that can occur from year to year. The effect of this is magnified due to the relatively small numbers concerned.

Electrification Condition – AC Traction Feeder Stations & Sectioning Points

This is a measure of the condition of AC traction Feeder Stations (FS) & Track Sectioning Points (TSPs), on a scale of 1-5, based on visual inspection and the age, robustness of design, maintenance/refurbishment history and operational performance of the 25kV switchgear. The measure reports the percentage of Feeder Stations & Track Sectioning Points falling within each of the defined condition grades. A condition grade of 1 is good and 5 is poor.

Results

| Table 28 Electrification Condition – AC Traction | | |
|--------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|
| Condition grade | 2000/01 % of feeder stations and sectioning points | 2000-02 two year total % of feeder stations and sectioning points |
| 1 | 17% | 20% |
| 2 | 57% | 57% |
| 3 | 23% | 21% |
| 4 | 3% | 2% |
| 5 | 0% | 0% |
| Average condition grade | 2.1 | 2.1 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for AC feeder station condition is assessed as ± 0.1 on the target.

Commentary

Little has changed in this measure of the condition from the previous year. Condition assessments are based on a combination of site inspections and service history. By the end of 2001/02 the cumulative proportion assessed stands at 57% for feeder stations and 34% for TSPs, this being on target for 100% population assessment in the control period.

Replacement of first generation FS and TSP sites has continued in Scotland Zone and a major new supply point provided at Corey’s Mill on the ECML.

Electrification Condition – DC Traction Substations

This is a measure of the condition of Railtrack’s DC Traction Substations, on a scale of 1-5, based on visual inspection and the age, robustness of design, maintenance/refurbishment history and operational performance of the HV switchgear, rectifier transformers, rectifiers and DC switchgear. A condition grade of 1 is good and 5 is poor.

Results

| Table 29 Electrification Condition – DC Traction | | |
|--------------------------------------------------|------------------------------------|---------------------------------------------------|
| Condition grade | 2000/01 % of feeder substations | 2000-02 two year total % of feeder substations |
| 1 | 14% | 11% |
| 2 | 56% | 55% |
| 3 | 30% | 34% |
| 4 | 0% | 0% |
| 5 | 0% | 0% |
| Average condition grade | 2.2 | 2.3 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for DC feeder station condition is assessed as ± 0.1 on the target.

Commentary

Condition assessments are based on a combination of site inspections and service history. By the end of 2001/02 the cumulative proportion assessed was 43% of total population.

Assessment for the 2001/02 year has been expanded to include all zones which feature DC electrified lines.

Electrification Condition – AC Contact Systems

This is a measure of the condition of AC contact systems, on a scale of 1-5, based on physical wear measurement of contact wire and visual inspection of key components including contact and catenary wires, registration assemblies and structures. A condition grade of 1 is good and 5 is poor.

Results

| Table 30 Electrification Condition – AC Contact System | | |
|--------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------|
| Condition grade | 2000/01 % of contact wire/key components | 2000-2 two year total % of contact wire/key components |
| 1 | 22% | 35% |
| 2 | 66% | 55% |
| 3 | 11% | 9% |
| 4 | 1% | 1% |
| 5 | 0% | 0% |
| Average condition grade | 1.9 | 1.8 |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for overhead line condition is assessed as ± 0.1 on the target.

Commentary

Condition assessments are based on a combination of site inspections and service history.

The cumulative total for tension lengths of overhead contact system assessed in 2000/01 and 2001/02 represents 6% of the total population and is on target to meet the 20% of population required in the current control period. Consecutive tension lengths of the same design and traffic load are expected to be in similar condition, and so the 20% samples will be carefully selected to be representative of the whole network.

The 2001/02 assessment sample has included a very small number of WCML tension lengths upgraded to the UK1 design range being implemented as part of WCRM.

Electrification Condition – DC Contact Systems

This is a measure of the condition of DC contact systems, on a scale of 1-5, based on physical wear measurement of conductor rail. A condition grade of 1 is good and 5 is poor.

Results

| Table 31 Electrification Condition – DC Contact System | | |
|--------------------------------------------------------|--------------------------------|----------------------------------------------|
| Condition grade | 2000/01 % of conductor rail | 2000-2 two year total % of conductor rail |
| 1 | 40% | 39% |
| 2 | 43% | 43% |
| 3 | 16% | 16% |
| 4 | 1% | 2% |
| 5 | 0% | 0% |

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for Conductor rail condition is assessed as ± 0.1 on the target.

Commentary

There is very little change in the results this year as from last year.

The assessment has been expanded in 2001/02 to include the Midland Zone conductor rail and will be expanded in the control period to include all zones having DC electrified lines.

The above results are based on data covering 66% of the Southern Region network (compared to 57% in 2000/01) plus 100% of the Midland Zone network.

Station Condition Index

This is the average condition rating of each station where trains make timetabled stops, summarised into categories (A – F, national hub - small unstaffed station) together with the overall condition rating for all stations.

This is calculated by assessing the condition of each element of a station by visual inspection. These condition scores are then combined into an overall score of each station.

Results

| Table 32 Number of stations in each condition grade | | | | | | | |
|-----------------------------------------------------|----------------|------------|-------------|------------|----------|----------|-------------|
| Station Category | Year | Grade 1 | Grade 2 | Grade 3 | Grade 4 | Grade 5 | Total |
| A – National hub | 2000/01 | 1 | 15 | 10 | 0 | 0 | 26 |
| | 2001/02 | 0 | 15 | 11 | 0 | 0 | 26 |
| B – Regional hub | 2000/01 | 0 | 51 | 8 | 0 | 0 | 59 |
| | 2001/02 | 0 | 54 | 12 | 0 | 0 | 66 |
| C – Important feeder | 2000/01 | 7 | 191 | 50 | 0 | 0 | 248 |
| | 2001/02 | 8 | 179 | 49 | 0 | 0 | 236 |
| D – Medium, staffed | 2000/01 | 15 | 208 | 58 | 0 | 0 | 281 |
| | 2001/02 | 19 | 212 | 60 | 1 | 0 | 292 |
| E – Small, staffed | 2000/01 | 28 | 504 | 118 | 2 | 0 | 652 |
| | 2001/02 | 35 | 505 | 127 | 3 | 0 | 670 |
| F - Small, unstaffed | 2000/01 | 61 | 787 | 288 | 7 | 0 | 1143 |
| | 2001/02 | 63 | 804 | 296 | 5 | 0 | 1168 |
| All Stations | 2000/01 | 112 | 1756 | 532 | 9 | 0 | 2409 |
| | 2001/02 | 125 | 1769 | 555 | 9 | 0 | 2458 |

Scoring scale: Grade 1 is good, Grade 5 is poor

The average condition grade for all stations in 2001/02 is 2.25.

Regulatory Target and Tolerance

The regulatory target is to maintain the average condition grade at 2.2.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for the station condition index is assessed as ± 0.1 on the target.

Commentary

The 2001 baseline was established by inspecting stations during that year and the previous 2 years. It was not possible to complete inspections at that time as the Station Regeneration Programme (SRP) works were underway. Where possible the missing stations have been included in the inspection sample for 2001/02. As part of the ongoing requirement to update the station condition index, Railtrack undertook inspections of approximately 20% of the station portfolio during 2001/02.

The condition score is an average of the score from 34 elements on the stations such as platforms, canopies, structure and decoration. These elements are condition rated using a scale of 1 to 5, where one is 'as installed' and five is 'no longer serviceable'. Learning from the last round of inspections, procedures were put in place to improve consistency. An auditor was also appointed so that Railtrack can demonstrate validation of station condition assessments. 20% of this year's samples was audited by site visits and desktop study.

The total number of Railtrack stations is 2507. A total of 603 stations were surveyed up to 1st April 2002. The national average for the complete station portfolio now stands at 2.25, for the stations involved this year the average is 2.28. Future inspections will form part of a larger 5 yearly inspection process where the focus will be business driven.

Station Facility Score

The level of facilities present at stations broken down by station category and by theme. The score is calculated by counting the number of specific items at each station. The facilities are grouped into 'themes'. The themes include the following facilities:

Access – disabled lavatories, induction loops, escalators;

Comfort & convenience – lavatories, shelters, covered trail on platforms;

Information & communications – clocks, public address, customer information systems;

Integrated transport – taxi ranks, car parks, highway markings;

Safety & security – lighting, handrails and anti-slip floors on footbridges & subways, CCTV, security doors & windows on staff accommodation, secure cash transfer facilities.

Results

| Table 33 Access score | | |
|-----------------------|------------|--------------|
| Station category | 2000/01 | 2001/02 |
| A | 100 (955) | 106.8 (1020) |
| B | 100 (1026) | 102.4 (1051) |
| C | 100 (2272) | 102.7 (2334) |
| D | 100 (1959) | 103.2 (2022) |
| E | 100 (2435) | 101.2 (2465) |
| F | 100 (3775) | 100.0 (3774) |

| Table 34 Comfort & convenience score | | |
|--------------------------------------|-------------|---------------|
| Station category | 2000/01 | 2001/02 |
| A | 100 (5545) | 97.3 (5396) |
| B | 100 (5679) | 103.6 (5885) |
| C | 100 (10131) | 100.2 (10151) |
| D | 100 (3963) | 101.8 (4036) |
| E | 100 (4694) | 101.3 (4754) |
| F | 100 (2631) | 98.7 (2596) |

| Table 35 Information & communications score | | |
|---------------------------------------------|------------|--------------|
| Station category | 2000/01 | 2001/02 |
| A | 100 (2149) | 102.9 (2212) |
| B | 100 (1860) | 103.4 (1923) |
| C | 100 (3803) | 102.8 (3909) |
| D | 100 (2738) | 106.7 (2921) |
| E | 100 (2676) | 101.9 (2728) |
| F | 100 (49) | 100.0 (49) |

| Table 36 Integrated transport score | | |
|--------------------------------------------|----------------|----------------|
| Station category | 2000/01 | 2001/02 |
| A | 100 (603) | 100.3 (605) |
| B | 100 (1062) | 105.0 (1115) |
| C | 100 (2517) | 100.2 (2522) |
| D | 100 (1644) | 102.6 (1687) |
| E | 100 (1373) | 100.6 (1381) |
| F | 100 (1590) | 99.1 (1576) |

| Table 37 Safety & security score | | |
|---------------------------------------------|----------------|----------------|
| Station category | 2000/01 | 2001/02 |
| A | 100 (15919) | 101.5 (16161) |
| B | 100 (12462) | 101.8 (12681) |
| C | 100 (23583) | 102.1 (24088) |
| D | 100 (17209) | 102.9 (17715) |
| E | 100 (21568) | 101.2 (21822) |
| F | 100 (15577) | 100.2 (15614) |

| Table 38 Network score | | |
|-------------------------------|----------------|----------------|
| All Stations | 2000/01 | 2001/02 |
| Network Score | 100 (173447) | 101.6 (176193) |

Regulatory Target

There is no regulatory target for this measure.

Commentary

This was a new measure introduced for the 2001 Annual Return. A subsequent audit of the scores and lessons learnt from the surveys has resulted in updated/revised scores for 2001 being included in this 2002 Annual Return. The scores for 2000/01 are presented as an index of 100 for ease of onward tracking of performance. Scores for 2001/02 are shown relative to the index base. The number of relevant assets in each category is shown in parenthesis.

In 90% of the results the scores have increased in value. The very small reduction in scores in the Comfort & Convenience station categories A and F could be accounted for by, at the time of survey, station regeneration/contractor work taking place and a reclassification of stations as they transfer between categories respectively. Similarly the very small reduction in the score for the Integrated transport station category F may be due to the reduction in services provided to some stations.

Light Maintenance Depot Condition Index

This measure assesses the overall average condition of Light Maintenance Depots (LMDs) by providing, at each financial year end, the number of depots in individual average condition ratings of 1 – 5.

Results

| Table 39 Light Maintenance Depot Condition Index | | |
|--------------------------------------------------|--------------------------|-------------------------------------------------------|
| Condition grade | 2000/01 No. of depots | 2000-02 two year total No. of depots in each grade |
| 1 | 0 | 0 |
| 2 | 1 | 3 |
| 3 | 6 | 18 |
| 4 | 2 | 6 |
| 5 | 0 | 0 |
| Average condition grade | 3.1 | 3.0 |

Scoring scale: 1 good, 5 poor.

Regulatory Target and Tolerance

The regulatory target is for no deterioration from a baseline average condition grade which will be established once a sufficient sample is achieved.

All asset condition measures are subject to statistical variability caused by the accuracy of condition assessment (there is inevitably some subjectivity involved in condition surveys), and because not every asset is assessed each year. This “noise” is expressed as a tolerance when comparing actual values in this Annual Return with any regulatory target. The tolerance for the depot condition index is assessed as ± 0.1 on the target.

Commentary

The completion of the 18 Light Maintenance Depot (LMD) inspections, together with the previous 9 inspections from 2000/01, has allowed an average condition score to be generated, based upon a sample of 30% of the 91 LMD properties. The measure covers 11 major elements at all LMDs such as track, superstructure and plant & equipment, albeit not all LMDs have all elements. The initial 9 in 2000/01 gave an average of 3.055 (rounded to 3.1), and with the 18 from 2001/02 the 27 in total gives a score of 3.022 (rounded to 3.0). Scores varied more widely in the second year of inspections, the first year varied from 2.4 to 3.6, but from 2.2 to 4.2 in the latter year.

Future inspections will form part of the 5 yearly inspection process, and as such the focus will be business driven inspections rather than an asset reporting exercise. As such the average condition score may decrease slightly, however the completion of the Depot Regeneration Programme and starting works to LMD fuelling at 49 locations may offset this.

Section 3 – Activity Volumes

This section provides data on the level of renewal activity on the network by giving volumes of work undertaken for 6 separate measures. Activity volumes are not subject to any regulatory target but will be closely monitored by the Regulator.

Note: individual volumes shown in the tables may not add up to the total due to rounding.

Rail Renewed

The total length of track in kilometres where re-railing has been carried out.

Results

| Table 40 Rail Renewed | | | |
|------------------------------|-----------------------|-----------------------------|-----------------------|
| | Actual 2000/01 | NMS forecast 2001/02 | Actual 2001/02 |
| | (km) | (km) | (km) |
| WCRM | 210 | 148 | 88 |
| Non-WCRM | | | |
| East Anglia | 142 | 51 | 101 |
| Great Western | 115 | 59 | 146 |
| London North Eastern | 110 | 163 | 217 |
| Midlands | 229 | 93 | 92 |
| North West | 108 | 63 | 102 |
| Scotland | 28 | 75 | 93 |
| Southern | 124 | 138 | 145 |
| Network total | 1064 | 790 | 983 |

Sleepers Renewed

The total length of track in kilometres where re-sleeping has been carried out.

Results

| Table 41 Sleepers Renewed – All Types | | | |
|----------------------------------------------|-----------------------|-----------------------------|-----------------------|
| | Actual 2000/01 | NMS forecast 2001/02 | Actual 2001/02 |
| | (km) | (km) | (km) |
| WCRM | 122 | 144 | 169 |
| Non-WCRM | | | |
| East Anglia | 29 | 41 | 52 |
| Great Western | 40 | 42 | 63 |
| London North Eastern | 40 | 101 | 80 |
| Midlands | 72 | 84 | 74 |
| North West | 109 | 51 | 89 |
| Scotland | 21 | 45 | 41 |
| Southern | 42 | 49 | 67 |
| Network total | 475 | 557 | 636 |

Table 42 Concrete Sleepers

| | Actual 2001/02 (km) |
|----------------------|---------------------|
| WCRM | 169 |
| Non-WCRM | |
| East Anglia | 37 |
| Great Western | 26 |
| London North Eastern | 20 |
| Midlands | 15 |
| North West | 17 |
| Scotland | 1 |
| Southern | 62 |
| Network total | 347 |

Table 43 Timber Sleepers

| | Actual 2001/02 (km) |
|----------------------|---------------------|
| WCRM | 0 |
| Non-WCRM | |
| East Anglia | 0 |
| Great Western | 0 |
| London North Eastern | 1 |
| Midlands | 2 |
| North West | 11 |
| Scotland | 0 |
| Southern | 3 |
| Network total | 17 |

Table 44 Steel Sleepers

| | Actual 2001/02 (km) |
|----------------------|---------------------|
| WCRM | 0 |
| Non-WCRM | |
| East Anglia | 15 |
| Great Western | 37 |
| London North Eastern | 59 |
| Midlands | 57 |
| North West | 61 |
| Scotland | 41 |
| Southern | 2 |
| Network total | 272 |

Commentary

The breakdown showing the split of sleeper renewals by type of sleeper are new measures for 2001/02. There were no forecasts for this breakdown in the NMS.

Analysis of sleeper types for Southern based on Zone Engineers' assessment only as detailed data not available. Systems will be put into place to enable split to be provided in future years.

Ballast Renewed

The total length of track in kilometres where re-ballasting has been carried out.

Results

| Table 45 Ballast Renewed | | | |
|---------------------------------|--------------------------------|--------------------------------------|--------------------------------|
| | Actual 2000/01 (km) | NMS forecast 2001/02 (km) | Actual 2001/02 (km) |
| WCRM | 112 | 156 | 90 |
| Non-WCRM | | | |
| East Anglia | 35 | 48 | 61 |
| Great Western | 44 | 72 | 80 |
| London North Eastern | 58 | 124 | 100 |
| Midlands | 61 | 69 | 78 |
| North West | 96 | 61 | 82 |
| Scotland | 40 | 52 | 53 |
| Southern | 50 | 66 | 80 |
| Network total | 496 | 648 | 624 |

Structures Renewed

The total number of structures spans that have been renewed or undergone major maintenance. The term 'structure' shall include only over and under bridges, side of line bridges and footbridges.

Results

| Table 46 Structures Renewed | | |
|------------------------------------|------------------------------------------|------------------------------------------|
| | Actual 2000/01 (No. of spans) | Actual 2001/02 (No. of spans) |
| WCRM | 5 | 21 |
| Non-WCRM | | |
| East Anglia | 0 | 4 |
| Great Western | 1 | 9 |
| London North Eastern | 2 | 23 |
| Midlands | 13 | 24 |
| North West | 14 | 11 |
| Scotland | 6 | 11 |
| Southern | 4 | 22 |
| Network total | 45 | 125 |

Commentary

The above represents only a small part of the overall work carried out on our structures. During 2001/02 we have developed additional measures for culverts and retaining walls which will be reported in the 2003 Annual Return. Development work on further measures continues.

Signalling Renewed

The total length of track in kilometres where the signalling has been renewed.

Results

| Table 47 Signalling Renewed | | |
|-----------------------------|------------------------|------------------------|
| | Actual 2000/01 (km) | Actual 2001/02 (km) |
| WCRM | 142 | 0 |
| Non-WCRM | | |
| East Anglia | 55 | 60 |
| Great Western | 1 | 0 |
| London North Eastern | 41 | 6 |
| Midlands | 5 | 0 |
| North West | 1 | 0 |
| Scotland | 0 | 0 |
| Southern | 95 | 27 |
| Network total | 340 | 93 |

Commentary

During 2001/02 significant resignalling work were carried out at Dartford (Southern, 27.1km), Leeds (LNE, 6.39km) and on the West Anglia Route Modernisation project (East Anglia, 60.0km).

S&C Renewed

The total number of switch and crossing (S&C) units that have been renewed.

Results

| Table 48 S&C Renewals | |
|-----------------------|------------------------|
| | Actual 2001/02 (Nr) |
| WCRM | 26 |
| Non-WCRM | |
| East Anglia | 6 |
| Great Western | 17 |
| London North Eastern | 38 |
| Midlands | 34 |
| North West | 0 |
| Scotland | 0 |
| Southern | 15 |
| Network total | 136 |

Commentary

This is a new measure which has been agreed with ORR and is reported for the first time in this Annual Return.

Section 4 - Network Capability

This section reports data on four measures of network capability:

- Linespeed Capability
- Gauge Capability
- Structures Route Availability
- Electrification

Network capability data previously reported in the NMS and in the 2001 Annual Return was derived on an incremental basis by adding or subtracting known changes in a year to the previous year's figures, thus, any underlying error in the base data would be continued. In order to address this concern, we carried out a complete re-measure in 2001/02; the network capability data reported in this Annual Return shows the results of this re-basing exercise. Definitive operating publications and information from asset databases was used to undertake the re-measure.

Regulatory Targets

The regulatory targets for each of the network capability measures is for no overall reduction in functionality during the control period except as agreed through the network change procedure.

Linespeed Capability

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

- up to 35 miles per hour
- 40-75 miles per hour
- 80-105 miles per hour
- 110-125 miles per hour
- over 125 miles per hour

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

Results

| Table 49 Linespeed Capability | |
|-------------------------------|--------------------------------------------|
| Speed band (mph) | April 02 km of track in each speed band |
| Up to 35 | 4,427 |
| 40 – 75 | 17,462 |
| 80 – 105 | 7,724 |
| 110 – 125 | 2,359 |
| Over 125 | 0 |
| Total | 31,972 |

Changes

The table below uses the following key to describe reasons for changes:

- SAU: Sectional Appendix update
- LIP: Linespeed improvement programme
- SPAD: Signal Passed at Danger mitigation measure
- ELC: Enhanced linespeed compensations (9/12/2001)
- WN: Wrongly notified
- COW: Condition of Wall

Table 50 Linespeed capability changes

| Zone | Strategic Route | Previous Speed | New Speed | Reason for change | ELR | Start Mls.Yds | Finish Mls.Yds | Length (Mls.Yds) | Track ID |
|------|-----------------|----------------|-----------|-------------------|------|---------------|----------------|------------------|----------|
| EAZ | 15 | 50 | 40 | SAU | HDT | 7.46 | 7.94 | 0.48 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 188.00 | 191.09 | 3.00 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 192.04 | 195.04 | 3.00 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 196.01 | 197.06 | 1.05 | 2100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 201.08 | 205.08 | 4.00 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 205.11 | 207.16 | 2.05 | 2100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 210.05 | 212.13 | 2.08 | 2100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 213.09 | 217.04 | 3.13 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 220.06 | 222.07 | 2.01 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 230.05 | 231.09 | 1.04 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 231.11 | 233.09 | 1.15 | 2100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 233.09 | 231.11 | 1.15 | 1100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 231.09 | 230.05 | 1.04 | 1100 |
| NWZ | 12 | 75 | 35/50 | LIP | CNH3 | 224.00 | 223.15 | 0.02 | 1100 |
| NWZ | 12 | 75 | 50 | LIP | CNH3 | 223.15 | 223.05 | 0.11 | 1100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 222.13 | 220.02 | 2.12 | 1100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 217.04 | 210.06 | 6.16 | 1100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 208.15 | 205.11 | 3.04 | 1100 |
| NWZ | 12 | 75 | 85 | LIP | CNH3 | 205.08 | 201.08 | 4.00 | 1100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 197.02 | 196.02 | 1.00 | 1100 |
| NWZ | 12 | 75 | 90 | LIP | CNH3 | 191.09 | 188.00 | 3.09 | 1100 |
| NWZ | 12 | 75 | 40/70 | LIP | CNH3 | 184.04 | 184.01 | 0.03 | 1100 |
| NWZ | 12 | 75 | 65/75 | LIP | CNH3 | 182.06 | 182.03 | 0.03 | 1100 |
| NWZ | 13 | 40 | 30 | SPAD | HGC | 2.14 | 2.08 | 0.06 | 2100 |
| NWZ | 1 | 110 | 100 | ELC | CGJ7 | 14.04 | 14.07 | 0.02 | 1100 |
| NWZ | 1 | 90 | 85 | ELC | CGJ7 | 21.16 | 22.02 | 0.04 | 1100 |
| NWZ | 1 | 85 | 80 | ELC | CGJ7 | 25.17 | 26.03 | 0.04 | 1100 |
| NWZ | 1 | 80 | 90 | ELC | CGJ7 | 38.03 | 38.06 | 0.02 | 1100 |
| NWZ | 1 | 80 | 70/80 | ELC | CGJ7 | 44.01 | 44.13 | 0.11 | 1100 |
| NWZ | 1 | 110 | 80 | ELC | CGJ7 | 51.12 | 51.15 | 0.03 | 1100 |
| NWZ | 1 | 105 | 70/85 | ELC | CGJ7 | 63.07 | 63.12 | 0.05 | 1100 |
| NWZ | 1 | 85 | 70/85 | ELC | CGJ7 | 63.12 | 64.01 | 0.07 | 1100 |

Table 50 Linespeed capability changes

| Zone | Strategic Route | Previous Speed | New Speed | Reason for change | ELR | Start Mls.Yds | Finish Mls.Yds | Length (Mls.Yds) | Track ID |
|------|-----------------|----------------|-----------|-------------------|------|---------------|----------------|------------------|----------|
| NWZ | I | 90 | 70/85 | ELC | CGJ7 | 64.01 | 64.09 | 0.08 | 1100 |
| NWZ | I | 110 | 100 | ELC | CGJ7 | 14.04 | 14.07 | 0.02 | 2100 |
| NWZ | I | 100 | 90 | ELC | CGJ7 | 29.01 | 29.05 | 0.04 | 2100 |
| NWZ | I | 100 | 80 | ELC | CGJ7 | 37.08 | 37.05 | 0.05 | 2100 |
| NWZ | I | 80 | 70/80 | ELC | CGJ7 | 44.03 | 44.13 | 0.09 | 2100 |
| NWZ | I | 95 | 75 | ELC | CGJ7 | 49.14 | 49.17 | 0.03 | 2100 |
| NWZ | I | 80 | 75 | ELC | CGJ7 | 49.17 | 51.12 | 1.13 | 2100 |
| NWZ | I | 110 | 75 | ELC | CGJ7 | 51.12 | 51.17 | 0.04 | 2100 |
| NWZ | I | 90 | 85 | ELC | CGJ7 | 64.01 | 64.07 | 0.06 | 2100 |
| SCOT | 14 | 100/90 | 60 | WN | ECN3 | 209.15 | 210.01 | 390.00 | 1100 |
| SCOT | 39 | 60 | 40 | SPAD | HMN2 | 0.04 | 0.07 | 220.00 | 2100 |
| SCOT | 39 | 20 | 75 | SPAD | WWD | 87.01 | 87.13 | 1240.00 | 1100 |
| SCOT | 2 | 60 | 40 | SPAD | ECM9 | 0.03 | 0.06 | 368.00 | 3410 |
| SCOT | 40 | 5 | 15 | LIP | CWHI | 18.11 | 19.01 | 759.00 | 1500 |
| SCOT | 40 | 5 | 15 | LIP | CWHI | 18.12 | 19.02 | 768.00 | 2501 |
| SCOT | 40 | 5 | 15 | LIP | CWHI | 18.13 | 19.02 | 578.00 | 2502 |
| SCOT | 41 | 50 | 50/20 | COW | WCK | 0.09 | 0.13 | 360.00 | 3400 |

Gauge Capability

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

- W6, height of vehicle (h)3338mm- width of vehicle (w)2600mm
- W7, (h)3531mm- (w)2438mm
- W8, (h)3618mm- (w)2600mm
- W9, (h)3695mm- (w)2600mm
- W10, (h)3900mm- (w)2500mm

Results

Table 51 Gauge Capability

| Gauge band | April 02 km of route in each gauge band |
|------------|--------------------------------------------|
| W6 | 15,787 |
| W7 | 11,668 |
| W8 | 8,695 |
| W9 | 2,496 |
| W10 | 163 |

Changes

No changes reported in 2001/2002.

Structures Route Availability

This is a measurement of the length of track in kilometres capable of accepting different loaded vehicle types by reference to the Structures Route Availability (RA) value. There are three RA value bands:

- RA 1-6
- RA 7-9
- RA 10

This measure represents the lesser of the maximum single axle weight or the maximum equivalent load effect of a whole vehicle for underline bridges and structures on a route, specified in the definitive operating publication.

Results

| Table 52 Structures Route Availability | |
|----------------------------------------|-----------------------------------------|
| RA bands | April 02 km of track in each RA band |
| RA 1-6 | 2,321 |
| RA 7-9 | 26,196 |
| RA 10 | 2,582 |
| Total | 31,099 |

Comments

Structures Route Availability was re-based to report solely on the capability of the network to accept different loaded vehicle types by reference to the RA value. It no longer reports on permitted traffic flows, which required operating restrictions to permit the passage of traffic heavier than the capability of the structure at the maximum permitted line speed of the route. Additionally, re-calculating the baselines has resulted in a difference in the total kilometres of track for RA and for linespeed. This is currently being addressed and we hope to report the amended data in the 2003 Annual Return.

Changes

| Table 53 Route Availability (RA) changes | | | | | | |
|------------------------------------------|-----------------|------------------------------|------------------|-------------|--------|--------------------------|
| Zone | Strategic Route | Structure identity | Approx. Location | Previous RA | New RA | Reason for change |
| SCOT | 38 | GSW Route | 33.0171-109.000 | 10 | 8 | Conditions of structures |
| SCOT | 45 | Kaypark Jn-Riccarton (Goods) | 0.0000-001.0023 | 10 | 8 | Conditions of structures |

Electrification

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

- Overhead line at 25kV a.c.
- Overhead line at 1500V d.c.
- 3rd rail 650/750V d.c.

The measurement includes the length of running track, including loops but excluding sidings and depots. Lengths of track that have more than one type of electrification count towards each of the respective electrification types. In addition, line that was not energised and permanently earthed was not included.

Results

| Table 4 Electrification capability | |
|------------------------------------|---------------------------------------|
| Type | April 2002 km of electrified track |
| 25 kV a.c. overhead | 7,937 |
| 3 rd rail 650/750V d.c. | 4,493 |
| 1500V d.c. overhead | 4 |

Changes

| Table 4 Electrification capability changes | | | | | |
|--------------------------------------------|-----------------|------|------------------------|--------------------|-----------|
| Zone | Strategic Route | ELR | Line ID | Length +/- Mls.Yds | Type |
| NWZ | I | CMP1 | Alderley Edge: Up Loop | -0.1153 | 25kV a.c. |
| NWZ | I | CMP1 | Handforth: Up Loop | -0.0445 | 25kV a.c. |
| NWZ | I | CGJ7 | Harrisons Line Sidings | -0.0523 | 25kV a.c. |

Section 5 – Reconciliation for 2001 NMS

This Reconciliation Statement reports upon:

- the extent to which forecasts shown in the 2001 Network Management Statement (NMS) were achieved in the year 2001/02.
- the extent to which the forecasts were not achieved
- reasons for material changes to works forecast in the 2001 NMS.

Reconciliation Statements for the 1998 and 1999 Network Management Statements were prepared as discrete documents. The Reconciliation Statement for the 2000 NMS was incorporated into the 2001 Annual Return. This section of the Annual Return contains the Reconciliation Statement for 2001/02 works and expenditure, which was forecast in the 2001 NMS.

Existing NMS routes do not generally align with Zone boundaries. Our project planning and subsequent project monitoring is carried out on a Zone-wide programme basis for track, structures and other renewals and on a project basis for specific projects such as resignalling and enhancements. These projects and programmes do not generally align with the current 45 NMS routes.

In order to present renewal and enhancement data by route in the NMS, it is necessary to apportion forecast expenditure between routes. The process of cutting projects, which were previously a recognised entity, across several routes and then again by asset category, can lead to inaccuracy and some incorrect assignment. Some projects are not appropriate for assignment to individual routes and this leads to Zonal totals being greater than the sum of routes. It also contributes to changes between routes and between asset categories during the year.

Following publication of the NMS, work is managed by Zonal programmes and projects, and changes to scope, cost, and timescales are recorded on this basis. Reconciling actual expenditure captured by project to forecast expenditure previously presented by route is therefore a very resource-intensive exercise. As can be seen from this Annual Return, a large number of reported changes are as a result of a different re-allocation between routes / asset categories rather than physical changes to scope or cost.

We did ask the Regulator to drop the requirement for route expenditure comparisons, but the request was refused. Nevertheless, for reasons described above, we do not believe that such a comparison provides any real value and are concerned that it diverts resources away from more useful work. We therefore hope that the Regulator can reconsider his stance for future reporting. We propose a dialogue with ORR to agree how regulatory reporting can be better aligned with the way in which projects are planned and managed.

The financial forecasts in this Reconciliation Statement are shown as they were stated in the 2001 NMS, (i.e. 2001/02 prices). The actuals for 2001/02 are shown in cash prices.

Data for 2001/02 on operational performance, condition of certain assets and the volume of renewal activities is reported in other sections of this Annual Return.

The following explanations are common across the project portfolio and are not repeated in individual tables:

IOS

The Track and Signalling IOS programme has not progressed as originally planned because signalling design resources were fully utilised on TPWS and essential renewal works. An individual explanation for IOS work is not therefore included in each route table.

TPWS

This programme is managed on a Zonal basis but its forecast expenditure was disaggregated by route in the NMS. Re-allocation of TPWS expenditure between routes has occurred because actual expenditure is based on a more fully developed scope of work and was influenced by changes to the programme between routes, in order to optimise delivery of the overall project.

Lineside buildings

Variances are generally as a result of misalignment between regulatory reporting categories (Stations, Depots and Lineside Buildings) and accounting categories (Operational Property AMP).

Zonal comparisons

The Annual Return provides details of expenditure by zone, thus enabling cost and performance comparisons to be made. Any such comparisons should be treated with extreme caution because of the different operating characteristics of each zone. These differences include geography, network density, freight tonnage, degree of congestion, length of electrified track and the age of assets.

Network total

| National expenditure to sustain the network (£m) | | | |
|--------------------------------------------------|--------------|-------------|-------------|
| (2001/02 prices) | NMS Forecast | Actual | Variance |
| Maintenance | 898 | 950 | 52 |
| Renewals | | | |
| Track | 653 | 802 | 149 |
| Signalling | 652 | 392 | -260 |
| Structures | 300 | 268 | -32 |
| Electrification | 168 | 144 | -24 |
| Plant & Machinery | 103 | 89 | -14 |
| Information Systems | 88 | 30 | -58 |
| Telecoms | 124 | 62 | -62 |
| Stations | 163 | 119 | -44 |
| Depots | 43 | 18 | -25 |
| Lineside buildings | 22 | 5 | -17 |
| Other | 14 | 25 | 11 |
| Total renewals | 2328 | 1954 | -374 |

For an explanation of variances, please see individual Zonal tables.

Where above figures are greater than the sum of Zone totals, the difference is as a result of centrally procured items and nationally managed expenditure.

The Information Systems variance is partly as a result of a re-classification of categories. The above figure does not include £23m for development of Railtrack Asset maintenance Plan (RAMP) and Railtrack Asset Register (RAR) systems, which was re-classified as operating expenditure.

East Anglia

| East Anglia Zone expenditure (£m) | | | |
|-----------------------------------|--------------|------------|-----------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 101 | 102 | 1 |
| Renewals | | | |
| Track | 34 | 63 | 29 |
| Signalling | 40 | 34 | -6 |
| Structures | 15 | 14 | -1 |
| Electrification | 12 | 21 | 9 |
| Plant & Machinery | 5 | 1 | -4 |
| Telecoms | 8 | 3 | -5 |
| Stations | 7 | 12 | 5 |
| Depots | 2 | 0 | -2 |
| Lineside Buildings | 3 | 0 | -3 |
| Total renewals | 127 | 148 | 21 |
| Total enhancements | 18 | 19 | 1 |

Track: The £29m additional expenditure is attributable to unplanned GCC works of £19m and associated scrap removal costs of £3m, with the remaining £7m being due to an increased number of plain line renewals.

Signalling: The £6m variance is attributable to the West Anglia Route Modernisation (WARM) project, where the NMS provisional classification of works by asset category was revised.

Electrification: The £9m additional expenditure is also attributable to the WARM project, where the classification of works by asset category in the NMS was revised.

Plant and Machinery: The £4m variance was due to a number of small schemes, whose expenditure was either lower than forecast or the asset category was changed.

Telecoms: The £5m variance is attributable to a number of schemes. The main one of these is renewal of Customer Information Systems (CIS), where delays have been experienced in obtaining agreement to the final scope of the project from the customer.

Stations: The additional expenditure was due to the Station Regeneration Scheme continuing to spend during 2001/02, which was not included in the NMS forecast.

For further details, please see individual route tables.

Great Western

| Great Western Zone expenditure (£m) | | | |
|-------------------------------------|--------------|-----------|------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 132 | 150 | 18 |
| Renewals | | | |
| Track | 57 | 91 | 34 |
| Signalling | 20 | 21 | 1 |
| Structures | 46 | 46 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 4 | 3 | -1 |
| Telecoms | 7 | 5 | -2 |
| Stations | 14 | 7 | -7 |
| Depots | 14 | 2 | -12 |
| Lineside Buildings | 3 | 0 | -3 |
| Total renewals | 166 | 175 | 9 |
| Total enhancements | 77 | 52 | -25 |

Maintenance: Of the £18 increase in costs, £8m related to GCC works for enhanced inspections and additional costs incurred for the management of the works. A further £6m was due to settlement of outstanding claims and £4m for additional maintenance which was not envisaged in the forecast, including maintenance for route 11, the responsibility for which transferred from Midlands Zone during the year.

Track: The £34m variance was as a result of the following: Plain Line Track, £10m: There was an opportunity, with the contractor, to bring forward and deliver more than was planned in the track renewal programme. The majority of the additional work was planned for 2002/03. The work was undertaken on a number of routes. S&C, £2m: As with Plain Line track, there was an opportunity to accelerate the S&C renewal programme, bringing forward work planned for 2002/03. GCC, £ 21m: There was an underestimate in both time and cost for work planned at a number of difficult and demanding work sites. Freight Haulage, £1m: The additional expenditure for freight haulage was associated with the increase in the Plain Line track and S&C renewal programmes.

Telecoms: Of the £2m variance, £1m was as a result of the Oxford Signal Post Telephone (SPT) Concentrator project. It was contracted as a variation to the Reading SPT concentrator works but due to lengthy product acceptance testing for Reading, resources were diverted and works were rescheduled, with commissioning now planned for August 2002. The other £1m was for Driver Only Operation (DOO) CCTV & Monitors. The works consisted of 15 sites to install new equipment. A change in standards required a trial site, so the remaining 14 sites were deferred and are scheduled for implementation in 2002/03.

Stations: The variance was caused by re-prioritisation of works. Work banks were re-assessed and alternative frameworks for delivery were established.

Depots: Of the £12m variance, £9m was due to Old Oak Common, where a substantial proportion of work was deferred awaiting agreement from the customer regarding the final scope and funding. This has now been resolved and the project is due for completion during 2003. As per stations, work banks were re-assessed and alternative frameworks for delivery were established.

London North Eastern

| London North Eastern Zone expenditure (£m) | | | |
|--------------------------------------------|--------------|------------|------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 120 | 123 | 3 |
| Renewals | | | |
| Track | 89 | 113 | 24 |
| Signalling | 49 | 31 | -18 |
| Structures | 35 | 32 | -3 |
| Electrification | 4 | 0 | -4 |
| Plant & Machinery | 2 | 0 | -2 |
| Telecoms | 6 | 5 | -1 |
| Stations | 31 | 36 | 5 |
| Depots | 5 | 0 | -5 |
| Lineside Buildings | 4 | 1 | -3 |
| Total renewals | 225 | 218 | -7 |
| Total enhancements | 268 | 226 | -42 |

Track: The £24m additional expenditure is as a result of the following projects: Switch & Crossing renewals to mitigate GCC £12m, GCC mitigation in Moorgate Tunnel £2m, Track quality programme £2m, S&C works carried over from 2000/01 £2m, Whitby Branch £1m and TSR mitigation £5m.

Signalling: The £18m variance is due to signalling expenditure being rescheduled due to project timescale changes, mainly as a result of signalling resource shortages. Further details are shown in London North Eastern Zone tables for routes 2, 8, 13, 36 and 37.

£6m variance is due to the signalling interlockings stage 2 project £5m and signalling support £1m. Both these projects were delayed due to signalling resources being redirected to the West Coast Route Modernisation (WCRM) scheme.

Electrification: The variance is due to delays to the Electrical Control Room (ECR) renewal at Hornsey £1m, Overhead Line Equipment (OHLE) isolation switch replacement £1m and the Great Northern protection relay renewals £1m.

Stations: The variance is as a result of the Newcastle the phase 4 project £2m, GNER maintenance programme £1m and Leeds master plan £3m and other items.

For further details, please see individual route tables.

Midlands

| Midlands Zone expenditure (£m) | | | |
|--------------------------------|--------------|------------|-------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 144 | 134 | -10 |
| Renewals | | | |
| Track | 214 | 276 | 62 |
| Signalling | 321 | 177 | -144 |
| Structures | 49 | 43 | -6 |
| Electrification | 57 | 58 | 1 |
| Plant & Machinery | 4 | 4 | 0 |
| Telecoms | 28 | 17 | -11 |
| Stations | 25 | 21 | -4 |
| Depots | 1 | 0 | -1 |
| Lineside Buildings | 3 | 0 | -3 |
| Total renewals | 701 | 596 | -105 |
| Total enhancements | 234 | 226 | -8 |

Maintenance: Of the £10m variance, £6m is as a result of the Cambrian Line (route 11) transferring to Great Western Zone. The maintenance expenditure for this route is therefore included in Great Western figures. The remainder of the variance is as a result of lower than forecast expenditure.

Track: Of the £62m variance, £18m relates to the Cross Country Route Modernisation scheme, where accelerated renewals were incorrectly forecast as enhancement in the NMS. The correct classification of track Asset Maintenance Plan (AMP) is reflected above. An increased level of re-railing work to counter and mitigate the effects of gauge corner cracking was responsible for £13m and £8m was due increased work on the WCML slow lines, which was not forecast. The remainder was as a result of WCRM track alliance increased works (£12m) and increased Euston / Willesden remodelling costs (£13m) and to rounding.

Signalling: Of the £144m variance, £70m was due to installation of WCRM conventional signalling being re-scheduled, following re-prioritisation of WCRM works. A further £14m was as a result of re-scheduling signalling works to support linespeed alterations, again as a result of the WCRM project. Following discussion with major Stakeholders (SRA and Virgin), Train Control System (TCS) works were re-scheduled, thereby altering timescales for signalling works and associated control systems (£16m). Network management Centre (NMC) works were also re-prioritised (£10m). Re-scheduling of North Staffordshire / Ledburn and other minor signalling was responsible for £12m and a reduction in customer compensation payments, as a result of forecast disruption not taking place, was responsible for £13m. The remainder of the variance was as a result of re-scheduling Zonal renewals due to a shortage of resources

Structures: The £6m variance relates to re-scheduling of schemes from 2001/2 to 2002/3 due to lost possessions or contractor resources not being available.

Stations, Depots & Lineside Buildings: Timescales for the proposed dowry deal for Neville Hill depot changed and forecast spend was incorrectly classified as station spend, which is corrected in the actuals.

North West

| North West Zone expenditure (£m) | | | |
|-----------------------------------------|---------------------|---------------|-----------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 116 | 107 | -9 |
| Renewals | | | |
| Track | 90 | 106 | 16 |
| Signalling | 107 | 50 | -57 |
| Structures | 56 | 35 | -21 |
| Electrification | 61 | 46 | -15 |
| Plant & Machinery | 2 | 1 | -1 |
| Telecoms | 19 | 7 | -12 |
| Stations | 20 | 18 | -2 |
| Depots | 3 | 3 | 0 |
| Lineside Buildings | 2 | 0 | -2 |
| Total renewals | 361 | 266 | -95 |
| Total enhancements | 115 | 100 | -15 |

Maintenance: The volume of maintenance work and expenditure was generally in line with the forecast. The £9m variance was due to a write-back of the previous years provisions for claims.

Track: Of the £16m increase in expenditure, £2m is as a result of WCRM track alliance increased works and £5m is due to bringing route 35 work forward to gain efficiencies, as described in the Zonal table. The remaining £7m is explained under route 36 and the rest is due to rounding.

Signalling: Of the £57m variance, £9m was due to installation of WCRM conventional signalling being re-scheduled, following re-prioritisation of WCRM works. A further £2m was as a result of re-scheduling signalling works to support linespeed alterations, again as a result of the WCRM project. Following discussion with major Stakeholders (SRA and Virgin), Train Control System (TCS) works were re-scheduled, thereby altering timescales for signalling works and associated control systems (£2m). Network management Centre (NMC) works were also re-prioritised (£2m). Re-scheduling of minor signalling was responsible for £13m and Rescheduling of works in Manchester South to adhere to agreements regarding the Commonwealth games accounted for £15m. A reduction in customer compensation payments, due to work not taking place, was responsible for £4m. The remainder of the variance was as a result of re-scheduling Zonal renewals due to a shortage of resources

Structures: The variance is due to re-scheduling of works.

Electrification: Of the £15m variance, £7m is due to re-scheduling of WCRM works in Manchester South, to adhere to agreements regarding the Commonwealth Games. Re-scheduling of minor Overhead Line Equipment (OHLE) works was responsible for £2m and the remainder was due to lower than forecast TOC compensation (£2m) due to works not taking place and to rounding.

Telecoms: The variance is due to re-scheduling of works.

Scotland

| Scotland Zone expenditure (£m) | | | |
|--------------------------------|--------------|------------|------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 89 | 91 | 2 |
| Renewals | | | |
| Track | 53 | 77 | 24 |
| Signalling | 33 | 14 | -19 |
| Structures | 48 | 51 | 3 |
| Electrification | 14 | 11 | -3 |
| Plant & Machinery | 2 | 2 | 0 |
| Telecoms | 12 | 5 | -7 |
| Stations | 19 | 6 | -13 |
| Depots | 4 | 5 | 1 |
| Lineside Buildings | 2 | 0 | -2 |
| Total renewals | 188 | 171 | -17 |
| Total enhancements | 47 | 39 | -8 |

Track: Of the £24m variance, £13m is due to additional Scotland Zone expenditure on the WCML to mitigate gauge corner cracking. There was also additional expenditure of £6m on route 14 to mitigate GCC and to renew track which needed replacement due to heavy coal traffic. Similarly, route 39 required £7m additional GCC works and £5m additional renewals. The sum of these are reduced down to £24m by some negative variances described in individual route tables and by rounding.

Signalling: Of the £19m variance, £2m is as a result of a lower than expected spend out of the WCRM budget provision for minor signalling. A further £6m is due to lower expenditure on route 14 Edinburgh Waverley and £1m reduction in Perth resignalling due to a shortage of resources. Variances described under route 39 accounted for £5m and a re-assessment of the classification for signalling spend on level crossings was responsible for £1m. The remainder is due to other works and rounding.

Telecoms: Of the £7m variance, £2m is due to ongoing discussion with customers and stakeholders about the detailed scope of work and long lead times for CIS equipment renewals. Another £1m is due to deferral of the planned telecoms element of Edinburgh signalling renewals to 2002/03. Signal Post Telephone renewals deferred due to product approval and finalisation of the technical specification account for £1m. The remainder is due to renewals associated with signalling schemes being deferred.

Stations: The variance is due to Edinburgh Waverley and to Perth and Gourock Station Regeneration programme (SRP) works being deferred to 2002/3, due to ongoing discussions with stakeholders.

Southern

| Southern Zone expenditure (£m) | | | |
|--------------------------------|--------------|------------|------------|
| | NMS Forecast | Actual | Variance |
| Maintenance expenditure | 176 | 193 | 17 |
| Renewals | | | |
| Track | 75 | 68 | -7 |
| Signalling | 81 | 62 | -19 |
| Structures | 50 | 46 | -4 |
| Electrification | 20 | 7 | -13 |
| Plant & Machinery | 2 | 1 | -1 |
| Telecoms | 15 | 11 | -4 |
| Stations | 47 | 23 | -24 |
| Depots | 14 | 3 | -11 |
| Lineside Buildings | 4 | 0 | -4 |
| Total renewals | 306 | 221 | -67 |
| Total enhancements | 168 | 144 | -24 |

Maintenance: The £17m additional expenditure was as a result of the need to mitigate deteriorating asset condition, which was responsible for unforeseen expenditure across the Region. Gauge Corner Cracking and Pan 8 track fastening issues (a method of fastening rails to sleepers) also contributed to the increase in costs.

Track: The variance includes £6m as a result of a reduction in internal freight haulage charges.

Signalling: Of the £19m variance, Sheerness Resignalling is responsible for £3m (route 18), Dartford resignalling for £3m (route 18), the Golden Assets programme in Sussex and Wessex for £3m and the level crossing renewal programme for £3m. TPWS renewals account for £1m and Time Division Multiplexer (TDM) renewals for £2m. The remainder is as a result of other items and rounding. Delivery of signalling renewals suffered from resource constraints.

Electrification: Following consultation with SWT and Connex, Southern Region brought forward the development of the Power Supply Reinforcement project, to allow introduction of new rolling stock across the Region. The unplanned transfer of essential resources to this project adversely affected the development of other electrification schemes. This caused the majority of the £13m variance. The remainder of the variance was as a result of de-scoping the 'Switchgear Fault Levels Near Grid Points' project by £1m during development. Delays in receiving technical data from outside parties for the Dollands Moor electrical upgrade scheme now in feasibility deferred £1m expenditure.

Telecoms: The £4m variance is as a result of unforeseen resource constraints both internally and externally. Recruitment problems hindered the development of projects such as Driver Only Operation (DOO) CCTV renewals (£1m), Critical Control Circuits (£0.5m) and Raynes Park Electrical Control Room (ECR), £0.5m, as well as other smaller schemes.

Stations – Some delays to Station Regeneration Programme. Protracted negotiations with local authorities with regards to planning permission for Hastings station resulted in severe delays to the project, and the rescheduling of £3m of planned expenditure. Re-classification of Waterloo station work from renewal to enhancement (route 21) is responsible for £17m.

Depots – Depot variances are generally attributable to slippage of works at Victoria, Clapham Jcn, Strawberry Hill, Stewarts Lane and Wimbledon. This has resulted from delays with agreeing specifications with TOCs, possessions, and contractual issues.

Lineside buildings – Only minimal spend has been identified across all routes, suggesting a possible overstatement in the NMS. However, it is likely that some expenditure was captured and reported within Cyclical Maintenance under Stations & Depots.

Route 1 – West Coast Main Line: London - Glasgow & Edinburgh

| Route 1 | Midlands Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------|------------|-------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 135 | 172 | 37 |
| Signalling | 290 | 155 | -135 |
| Structures | 17 | 18 | 1 |
| Electrification | 56 | 58 | 2 |
| Plant & Machinery | 1 | 2 | 1 |
| Telecoms | 18 | 15 | -3 |
| Stations | 17 | 11 | -6 |
| Depots | 1 | 0 | -1 |
| Lineside Buildings | 1 | 1 | 0 |
| Total renewals | 535 | 432 | -103 |
| Committed enhancement | | | |
| WCRM | 139 | 151 | 12 |
| West Midlands WCRM related enhancements | 3 | 0 | -3 |
| TPWS | 10 | 15 | 5 |
| Other | 1 | 3 | 2 |
| Total committed enhancements | 153 | 169 | 16 |

Track: The £37m variance is made up of £12m increased spend by Midlands Zone as a result of increased re-railing on the route to prevent or mitigate the effects of Gauge Corner Cracking. The remainder of the variance is as a result of WCRM track alliance increased works of £12m and increase in WCRM Euston / Willesden remodelling of £13m.

Signalling: Of the £135m variance, £70m was due to installation of WCRM conventional signalling being re-scheduled, following re-prioritisation of WCRM works. A further £14m was as a result of re-scheduling signalling works to support linespeed alterations, again as a result of the WCRM project. Following discussion with major Stakeholders (SRA and Virgin), Train Control System (TCS) works were re-scheduled, thereby altering timescales for signalling works and associated control systems (£16m). Network management Centre (NMC) works were also re-prioritised (£10m). Re-scheduling of North Staffordshire / Ledburn and other minor signalling was responsible for £12m and a reduction in customer compensation payments, as a result of forecast disruption not taking place, was responsible for £13m.

| Route 1 | North West Zone expenditure (£m) | | |
|-------------------------------------|----------------------------------|------------|------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 61 | 61 | 0 |
| Signalling | 97 | 47 | -50 |
| Structures | 30 | 13 | -17 |
| Electrification | 56 | 41 | -15 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 18 | 6 | -12 |
| Stations | 5 | 5 | 0 |
| Depots | 1 | 0 | -1 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 267 | 173 | -94 |
| Committed enhancement | | | |
| Manchester Piccadilly Masterplan | 34 | 27 | -7 |
| TPWS | 6 | 9 | 3 |
| WCRM | 46 | 44 | -2 |
| Other | 1 | 0 | -1 |
| Total committed enhancements | 87 | 80 | -7 |

Signalling: Of the £50m variance, £9m was due to installation of WCRM conventional signalling being re-scheduled, following re-prioritisation of WCRM works. A further £2m was as a result of re-scheduling signalling works to support linespeed alterations, again as a result of the WCRM project. Following discussion with major Stakeholders (SRA and Virgin), Train Control System (TCS) works were re-scheduled, thereby altering timescales for signalling works and associated control systems (£2m). Network management Centre (NMC) works were also re-prioritised (£2m). Re-scheduling of minor signalling was responsible for £13m and Rescheduling of works in Manchester South to adhere to agreements regarding the Commonwealth games accounted for £15m. A reduction in customer compensation payments, due to work not taking place, was responsible for £4m.

Structures: The variance is due to re-scheduling of Asset maintenance Plan works, due to an improved understanding of asset condition.

Electrification: Of the £15m variance, £7m is due to re-scheduling of WCRM works in Manchester South, to adhere to agreements regarding the Commonwealth Games. Re-scheduling of minor Overhead Line Equipment (OHLE) works was responsible for £2m and the remainder was due to lower than forecast TOC compensation (£2m) due to works not taking place and to rounding.

Telecoms: The variance is due to re-scheduling of minor telecoms works.

Manchester Piccadilly Masterplan: Changes to project timescales resulted in some expenditure being deferred to 2002/03.

| Route 1 | Scotland Zone expenditure (£m) | | |
|-------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 16 | 29 | 13 |
| Signalling | 3 | 1 | -2 |
| Structures | 6 | 5 | -1 |
| Electrification | 11 | 10 | -1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 3 | 1 | -2 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 41 | 34 | -7 |
| Committed enhancement | | | |
| TPWS | 1 | 1 | 0 |
| WCRM | 10 | 11 | 1 |
| Total committed enhancements | 11 | 12 | 1 |

Track: The £13m additional expenditure is due to additional Scotland Zone expenditure on the WCML to mitigate gauge corner cracking.

Signalling: The £2m variance is as a result of a lower than expected spend out of the WCRM budget provision for minor signalling.

Route 2 – East Coast Main Line: London – Edinburgh

| Route 2 | London North Eastern Zone expenditure (£m) | | |
|--------------------------------------------------|--------------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 38 | 45 | 7 |
| Signalling | 20 | 12 | -8 |
| Structures | 12 | 11 | -1 |
| Electrification | 3 | 1 | -2 |
| Plant & Machinery | 1 | 0 | -1 |
| Telecoms | 2 | 1 | -1 |
| Stations | 14 | 22 | 8 |
| Depots | 1 | 0 | -1 |
| Lineside Buildings | 1 | 1 | 0 |
| Total renewals | 93 | 93 | 0 |
| Committed enhancement | | | |
| ECML Enabling Works | 30 | 22 | -8 |
| Thameslink 2000 (subject to procurement review) | 4 | 0 | -4 |
| TPWS | 5 | 4 | -1 |
| Other | 16 | 23 | 7 |
| Total committed Enhancements | 55 | 49 | -6 |
| Track and signalling IOS | | | |
| Loversall Carr Junction: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: The £7m additional expenditure is attributable to £3m as a result of additional work to mitigate Gauge Corner Cracking (GCC), £2m of S&C works being carried over from 2000/01 which were not included in the NMS forecast and Gauge Corner Cracking (GCC) works in Moorgate Tunnel, of which £2m was not included in the forecast.

Signalling: The £8m variance is due mainly to the following schemes being re-programmed as a result of a restricted signalling resource, which was re-prioritised on to the WCRM project: Signalling interlockings £4m, signalling support systems £1m, SPAD work £1m and level crossing renewals £1m.

Electrification: The £2m variance is due to three projects not taking place: the Electrical Control Room (ECR) renewal at Homsey, £1.5m, which was to replace the ECR, but a more detailed condition assessment led to deferral of the project. The Overhead line Equipment (OHLE) isolation switch replacement project (£1m) was not carried out due to possession problems. Protection Relay renewals for the Great Northern area variance by £1m due to a problem with the contractor.

ECML Enabling Works: The variance is as a result of delays to phase 2 enabling works, due to ongoing negotiations with SRA regarding the sponsorship and delivery mechanism.

Thameslink 2000: The variance is as a result of delays following the SRA procurement review and subsequent continuing negotiations regarding ongoing responsibility for the project.

Other: The increase in cost resulted from additional gauge clearance works for class 373 rolling stock between Doncaster and Leeds.

| Route 2 Scotland Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|----------------------------------------|--|--------------|----------|-----------|
| Renewals | | | | |
| Track | | 3 | 2 | -1 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 0 | 0 | 0 |
| Electrification | | 0 | 0 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 1 | 0 | -1 |
| Stations | | 6 | 1 | -5 |
| Depots | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 11 | 3 | -8 |
| Committed enhancement | | | | |
| TPWS | | 1 | 1 | 0 |
| Other | | 0 | 2 | 2 |
| Total comm. Enhancement | | 1 | 3 | 2 |

Track: Approximately £0.5m of track renewals work was deferred to permit additional work to be carried out to mitigate against Gauge Corner Cracking (GCC).

Telecoms: The planned £0.7m telecoms element of Edinburgh signalling renewals was deferred to 2002/3 due to an extended project scoping and design.

Stations: There was a re-classification of the spend for Edinburgh Waverley Station. All spend on this station was forecast as renewal, but some of it was enhancement. This is reflected in the 'other' enhancements entry, which includes Edinburgh Waverley.

Route 3 – Great Western Main Line (Paddington to Bristol and Swansea)

| Route 3 | Great Western Zone expenditure (£m) | | |
|---------------------------------------------|-------------------------------------|-----------|------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 19 | 25 | 6 |
| Signalling | 12 | 17 | 5 |
| Structures | 16 | 15 | -1 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 4 | 3 | -1 |
| Telecoms | 5 | 4 | -1 |
| Stations | 5 | 3 | -2 |
| Depots | 10 | 1 | -9 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 71 | 68 | -3 |
| Committed enhancement | | | |
| Great Western Depot Upgrades | 21 | 6 | -15 |
| ATP Infill programme: Bath – Bristol | 0 | 0 | 0 |
| Cross Country Routes Upgrade | 1 | 0 | -1 |
| Reading Infrastructure Enhancements Stage 2 | 3 | 3 | 0 |
| TPWS | 22 | 5 | -17 |
| Other | 5 | 16 | 11 |
| Total committed enhancements | 52 | 30 | -22 |
| Track and signalling IOS | | | |
| Bath Spa; Operational Flexibility | 0 | | 0 |
| Bristol Parkway; Operational Flexibility | 0 | | 0 |
| Cardiff – Swansea; Operational Flexibility | 0 | | 0 |
| Fliton Junction - Remodel | 0 | | 0 |
| Piling – Severn Tunnel Junction: Capacity | 0 | | 0 |
| Bristol TM – Oxford | N/A | | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £6m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Signalling: The £5m additional expenditure is due to an increase in scope and emerging costs associated with Ladbroke Grove reinstatement. The scope changes occurred after the publication of the Cullen Report. The signalling works are planned for Easter 2003 commissioning.

Stations: The £2m variance is due to station works being re-scheduled following re-prioritisation of the works into a strategic delivery programme, with efficiency gains. This entailed re-assessing the work banks and setting up different framework contracts for delivery across the portfolio.

Depots: The £9m variance was due to Old Oak Common depot works, which were substantially deferred into 2002/03, as a result of delays in agreeing the final scope and funding agreement with the customer. This has now been resolved and the project is due for 2003 completion.

Great Western Depot Upgrades: The £15m variance is associated with Old Oak Common, which is explained above.

TPWS: The £17m variance is due to an initiative to increase productivity. The works were re-prioritised to achieve a more efficient delivery strategy, which has put the programme on target.

Other: The additional spend includes two elements. £3m expenditure for Cat B SPAD reductions, which were classed as renewals but are enhancements. The second element is £3m for depot works at St Philips Marsh, Bristol, to install new facilities for First Great Western Class 180 rolling stock. This was not listed in the NMS as the date for commencement had not been determined. However, an agreement to begin works was reached during 2001/02.

Route 4 – Reading and Bristol - Penzance and branches

| Route 4 | Great Western Zone expenditure (£m) | | |
|---------------------------------------------------|-------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 10 | 16 | 6 |
| Signalling | 3 | 3 | 0 |
| Structures | 11 | 17 | 6 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 1 | 2 | 1 |
| Depots | 1 | 1 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 26 | 39 | 13 |
| Committed enhancement | | | |
| TPWS | 3 | 7 | 4 |
| Other | 0 | 0 | 0 |
| Total committed enhancement | 3 | 7 | 4 |
| Track and signalling IOS | | | |
| Truro-Roskear: Operational Flexibility | 0 | 0 | 0 |
| Probes-Burngullow: Operational Flexibility | 0 | 0 | 0 |
| Largin-Bodmin Parkway: Operational Flexibility | 0 | 0 | 0 |
| Liskeard-St Germans: Operational Flexibility | 0 | 0 | 0 |
| Totnes-Plymouth: Operational flexibility | 0 | 0 | 0 |
| Exmouth Junction: Operational Flexibility | 0 | 0 | 0 |
| Barnstaple-Exeter St David's: journey times | 0 | 0 | 0 |
| Worle-Western-Super-Mare: Operational flexibility | 1 | 0 | -1 |
| Cogload Junction – Plymouth: journey times | 0 | 0 | 0 |
| Paddington – Newbury journey times | 0 | 0 | 0 |
| Exeter St Davids: Operational Flexibility | 0 | 0 | 0 |
| Exeter St Davids | 0 | 0 | 0 |
| Newbury Operational Flexibility | 0 | 0 | 0 |
| Paddington – Plymouth via Newbury and Taunton | N/A | 0 | 0 |
| Largin – St Pinnock | N/A | 0 | 0 |
| Scheme name | | | 0 |
| Total opt. Enhancement | 1 | 0 | -1 |

Track: £6m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Structures: The £6m additional expenditure is made up of a number of elements as follows: £2m for additional works at Dawlish sea cliffs, £2m for additional fencing renewals, as there was an opportunity to install more fencing to reduce route crime (trespass and vandalism). Also, £1m was spent on a strengthening project at Yatton, which was brought forward from 2002/03 and £1m was required for emergency works associated with embankment slips between Bristol and Swindon.

TPWS: The £4m additional expenditure was due to an initiative to increase productivity. Works across the Zone were re-prioritised to suit a more efficient delivery strategy and the programme is on target.

Route 5 – Midlands Main Line: London Sheffield

| Route 5 | London North Eastern Zone expenditure (£m) | | |
|------------------------------------|--------------------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 7 | 2 | -5 |
| Signalling | 1 | 1 | 0 |
| Structures | 1 | 1 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 5 | 4 | -1 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 14 | 9 | -5 |
| Committed enhancements | | | |
| TPWS | 6 | 5 | -1 |
| Cross Country Routes Upgrade | 2 | 1 | -1 |
| Other | 0 | 0 | 0 |
| Total committed enhancement | 9 | 6 | -3 |

Track: The variance is attributable to Gauge Corner Cracking (GCC) renewal works. The programme, which was forecast on a Zonal basis and then apportioned by route, spent more on other routes and less on this one than was initially envisaged.

TPWS and CCRM both variance due to the shortage of signalling resources.

| Route 5 Midlands Zone expenditure (£m) | | | |
|-----------------------------------------------------|---------------------|---------------|-----------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 20 | 28 | 8 |
| Signalling | 15 | 6 | -9 |
| Structures | 10 | 7 | -3 |
| Electrification | 1 | 0 | -1 |
| Plant & Machinery | 1 | 1 | 0 |
| Telecoms | 4 | 1 | -3 |
| Stations | 5 | 2 | -3 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 1 | 1 | 0 |
| Total renewals | 56 | 46 | -10 |
| Committed enhancements | | | |
| Thameslink 2000 (subject to procurement review) | 13 | 9 | -4 |
| TPWS | 12 | 6 | -6 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 24 | 15 | -9 |
| Track and signalling IOS | | | |
| St Pancras-Bedford: Operational flexibility | 0 | 0 | 0 |
| West Hampstead-Hendon: Operational flexibility | 0 | 0 | 0 |
| Mountsorrel: Operational flexibility | 0 | 0 | 0 |
| Beeston-Mansfield Junction: Operational flexibility | 0 | 0 | 0 |
| Manchester Airport – Nottingham Capacity | N/A | 0 | 0 |
| Nottingham - Sheffield | N/A | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: The £8m variance is due to an increased level of re-railing and other associated work aimed at prevention and / or mitigation of Gauge Corner Cracking, coupled with an increased cost to the original programme proposed for the route.

Signalling: The £9m variance is due to re-timing of a variety of schemes, due to a lack of signalling design resources and contractor resources to deliver the work. Key schemes, with associated reductions in actual spend, are: Derby Power Signal Box (PSB) life extension works £3m, Trent PSB life extension works £3.2m, West Hampstead PSB life extension works £1.0m, level crossing removal at a variety of sites £0.5m and Solid State Interlocking (SSI) lightning protection upgrade £0.5m. These schemes have now been reprogrammed with our contractors and are scheduled for 2002/3 and 2003/4.

The £3m variance on structures is a result of how budgets for reactive and emergency works were split between routes rather than any variance during the year.

The £3m variance on telecoms is predominantly due to the slippage of two schemes as a result of a lack of contractor resources. The schemes are: renewal of the telecoms concentrator at Trent PSB (reduced spend of £1.4m) and renewal of CCTV for driver only operation on the Bedford - Moorgate section (reduced spend of £1.2m). Both have been re-programmed for 2002/3 and 2003/4.

The £3m variance on stations is due to an inaccuracy in the forecast, followed by a change to the timing of expenditure. Neville Hill Depot was to be subject of a deal with the train operating company, where Railtrack would pay £3m and the TOC would take on responsibility for maintenance of the depot. The forecast spend was classified as stations instead of depots and the deal is yet to take place.

Thameslink 2000: The variance is as a result of delays following the SRA procurement review and subsequent continuing negotiations regarding ongoing responsibility for the project.

Route 6 – Channel Tunnel Routes

| Route 6 | Southern Zone expenditure (£m) | | |
|-------------------------------------------------|--------------------------------|-----------|------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 17 | 15 | -2 |
| Signalling | 3 | 5 | 2 |
| Structures | 4 | 5 | 1 |
| Electrification | 4 | 2 | -3 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 2 | 1 | -2 |
| Stations | 4 | 3 | -1 |
| Depots | 0 | 0 | 0 |
| Total renewals | 35 | 29 | -6 |
| Committed enhancements | | | |
| CTRL Network Interface | 44 | 31 | -13 |
| Thameslink 2000 (subject to procurement review) | 20 | 15 | -5 |
| TPWS | 12 | 13 | 1 |
| Customer Information Systems for SWT | 2 | 0 | -2 |
| Other | 6 | 1 | -5 |
| Total committed enhancements | 85 | 60 | -25 |
| Track and signalling IOS | | | |
| Tunbridge Wells platform tumbucks | 0 | 0 | 0 |
| Ashford – Ramsgate. Journey Time improvement | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Electrification: £1m of this variance is as a result of late receipt of accurate technical information from outside parties for the Dollands Moor Eurotunnel electrical upgrade project. The project is currently in development, and the expenditure has been deferred to 2003/04. The remainder is as a result of the diversion of resources to the Power Supply Upgrade Project to facilitate new rolling stock.

Telecoms: Difficulties in letting the feasibility contract for the DOO scheme resulted in £0.4m variance. The change in overall philosophy for the Voice Recorder project prolonged the feasibility phase, and brought about a £0.2m variance on this particular route.

CTRL Network interface: The work was carried out at a lower cost than forecast in the NMS.

Thameslink 2000: The variance is as a result of delays following the SRA procurement review and subsequent continuing negotiations regarding ongoing responsibility for the project.

Customer Information System for SWT: The forecast was included on this route in error. Actuals are shown on SWT routes.

Route 7 – Derby to Didcot and Bristol via Birmingham

| Route 7 | Great Western Zone expenditure (£m) | | |
|-------------------------------------------------------------------------------------------|-------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 6 | 12 | 6 |
| Signalling | 2 | 1 | -1 |
| Structures | 9 | 7 | -2 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 0 | 0 | 0 |
| Total renewals | 19 | 21 | 2 |
| Committed Enhancements | | | |
| TPWS | 1 | 2 | 1 |
| Cross Country Routes Upgrade | 9 | 4 | -5 |
| Total committed enhancements | 10 | 6 | -4 |
| Track and signalling IOS | | | |
| Birmingham New Street – Bromsgrove – Worcester – Hereford: Operational flexibility | 0 | 0 | 0 |
| Bromsgrove Up Goods Loop conversion to passenger status: Operational flexibility | 0 | 0 | 0 |
| Blackwell Down Goods Loop: Operational flexibility | 0 | 0 | 0 |
| Birmingham New Street – Bromsgrove – Worcester – Hereford: Extend platforms at Bromsgrove | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £6m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Structures: Variance of £2m due to re-prioritisation of earthwork stability works, to address emergency works occurring on other routes in the Zone.

Cross Country Route Modernisation (CCRM): Variance of £5m as a result of a delay to work starting on site, due to contract negotiations. The works were re-programmed to meet an agreed completion date and are due for September 2002 completion.

| Route 7 Midlands Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|---------------------------------------------------------------------------|--|--------------|-----------|------------|
| Renewals | | | | |
| Track | | 29 | 40 | 11 |
| Signalling | | 4 | 4 | 0 |
| Structures | | 2 | 1 | -1 |
| Electrification | | 0 | 0 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 1 | 0 | -1 |
| Stations | | 1 | 1 | 0 |
| Depots | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 38 | 46 | 8 |
| Committed enhancements | | | | |
| TPWS | | 5 | 2 | -3 |
| Cross country Routes Upgrade | | 41 | 13 | -28 |
| Total committed enhancements | | 46 | 15 | -31 |
| Track and signalling IOS | | | | |
| Grand Junction – St Andrew’s Junction: Operational Flexibility | | 0 | 0 | 0 |
| Bordesley Junction – Bordesley South Junction: Operational Flexibility | | 0 | 0 | 0 |
| Washwood Heath (East): Operational flexibility | | 0 | 0 | 0 |
| Total track & signalling IOS | | 0 | 0 | 0 |

Track: The £11m variance is due to three reasons. First, a re-allocation of spend between enhancements and track renewals on the recognition that the accelerated renewals element of the Cross Country Route Modernisation scheme was incorrectly classified as enhancement spend in the NMS forecast (£18m). Second, a reduced level of spend against the planned (rather than accelerated) renewals budget on the Cross Country Route Modernisation scheme (£13m). Third, an increased level of re-railing and other associated work aimed at prevention and / or mitigation of the effects of Gauge Corner Cracking on this route (£6m).

Structures: The variance is due to a re-allocation of funds across categories on the Cross Country Route Modernisation scheme.

Telecoms: The £1m variance is due to re-timing of the scheme to renew the Signal Post Telephone (SPT) concentrator at Saltley PSB due, to a lack of contractor resources. This has been re-programmed for 2002/3 and 2003/4.

Cross Country Route Modernisation (CCRM): The majority of this variance is due to the re-classification of enhancement and renewal expenditure noted above.

Route 8 – North Trans – Pennine (Main)

| Route 8 | North West Zone expenditure (£m) | | |
|-------------------------------------|----------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 0 | 0 | 0 |
| Signalling | 1 | 0 | -1 |
| Structures | 1 | 1 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 2 | 1 | -1 |
| Committed enhancements | | | |
| TPWS | 1 | 0 | -1 |
| Other | 1 | 0 | -1 |
| Total committed enhancements | 2 | 0 | -2 |

There are no significant variances in the above table.

| Route 8 London North Eastern Zone expenditure (£m) | | | |
|-----------------------------------------------------------|---------------------|---------------|-----------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 8 | 17 | 9 |
| Signalling | 7 | 4 | -3 |
| Structures | 6 | 5 | -1 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 10 | 9 | -1 |
| Depots | 4 | 0 | -4 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 35 | 36 | 1 |
| Committed enhancements | | | |
| Leeds 1 st | 91 | 73 | -18 |
| Neville Hill Depot Works | 3 | 0 | -3 |
| TPWS | 3 | 2 | -1 |
| Other | 3 | 2 | -1 |
| Total committed enhancements | 100 | 77 | -23 |

Track: The £9m additional expenditure on renewals is attributable to a re-distribution of expenditure for the Leeds 1st project. This cost was originally forecast as an enhancement, but it is allocated as a renewal above.

Signalling: The £3m variance on renewals is due to the following schemes being re-programmed as a result of a restricted signalling resource, which was re-prioritised on to the WCRM project: Signalling interlockings, signalling support systems, SPAD work, level crossing renewals and minor renewals. The projects did not require any life extension work to be carried out in the short term.

Depots: The variance is due to works being re-prioritised to different areas.

Leeds 1st is made up of a number of components. The Leeds 1st element of the work spent £43m against a £66m forecast, partly as a result of the re-classification of £9m track work as renewals described above, and partly as a result of works being re-phased into 2002/03. Enhancement compensation to Train Operators was £21m against a £16m forecast as a result of changes to implementation timescales. The remainder of the expenditure, mainly £9m for Electrical Control Room (ECR) works and York Control Room Re-location was £9m as per the forecast.

Neville Hill carriage washer project: The implementation phase was delayed, causing a £3m variance, as a result of awaiting a decision from the customer regarding the scope of works.

Route 9 – Birmingham and Coventry to Peterborough

| Route 9 | Midlands Zone expenditure (£m) | | |
|-------------------------------------|--------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 4 | 0 |
| Signalling | 3 | 2 | -1 |
| Structures | 1 | 1 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 9 | 7 | -2 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Total committed enhancements | 1 | 1 | 0 |

Signalling: The variance of £1m is due to a lack of signalling design and contractor resources to progress the feasibility and development phases of the scheme to renew the signalling between Nuneaton and Leicester. The project has now been re-examined and the element of it which related to the renewal of the signalling controlled by Hinkley, Croft and Narborough signal boxes has been re-programmed for 2003/4.

Route 10 – Crewe to Newport via Shrewsbury

| Route 10 | Great Western Zone expenditure (£m) | | |
|----------------------------------------------|-------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 8 | 3 |
| Signalling | 1 | 0 | -1 |
| Structures | 2 | 2 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Total renewals | 8 | 10 | 2 |
| Committed enhancements | | | |
| TPWS | 3 | 1 | -2 |
| Total committed enhancements | 3 | 1 | -2 |
| Track and signalling IOS | | | |
| Cardiff Central – Crewe capacity improvement | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £3m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

TPWS: The £2m variance is due to an initiative to increase productivity. The works were re-prioritised to achieve a more efficient delivery strategy, which puts the programme on target.

| Route 10 Midlands Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|-----------------------------------------|--|--------------|----------|-----------|
| Renewals | | | | |
| Track | | 1 | 1 | 0 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 0 | 0 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 2 | 1 | -1 |
| Committed enhancements | | | | |
| TPWS | | 0 | 0 | 0 |
| Total committed enhancements | | 0 | 0 | 0 |

There are no significant variances in the above table.

| Route 10 North West Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|-------------------------------------------|--|--------------|----------|----------|
| Renewals | | | | |
| Track | | 0 | 0 | 0 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 0 | 0 | 0 |
| Total expenditure | | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 11 – Wolverhampton to Chester, Aberystwyth and Pwllheli

| Route 11 | Midlands Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 3 | 0 |
| Signalling | 2 | 2 | 0 |
| Structures | 1 | 1 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 0 | -1 |
| Stations | 0 | 0 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 8 | 6 | -2 |
| Committed enhancements | | | |
| TPWS | 2 | 1 | -1 |
| Other | 1 | 0 | -1 |
| Total committed enhancements | 3 | 1 | -2 |
| Track and signalling IOS | | | |
| Aberystwyth – Shrewsbury: Journey time | 0 | 0 | 0 |
| Chester – Shrewsbury journey time | N/A | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Telecoms: The £1m variance is due to the fact that the renewal of the Signal post Telephone (SPT) concentrator at Machynlleth was included in the NMS forecast for Midlands Zone. That part of the route was transferred to Great Western Zone during the year.

| Route 11 | North West Zone expenditure (£m) | | |
|-----------------------|----------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 0 | 0 | 0 |
| Signalling | 0 | 0 | 0 |
| Structures | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 12 – Manchester and Crewe to North Wales

| Route 12 | North West Zone expenditure (£m) | | |
|-----------------------------------------|----------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 5 | 0 |
| Signalling | 1 | 0 | -1 |
| Structures | 3 | 3 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 10 | 9 | -1 |
| Committed enhancements | | | |
| TPWS | 2 | 2 | 0 |
| Other | 1 | 0 | -1 |
| Total committed enhancements | 2 | 2 | 0 |
| Track and signalling IOS | | | |
| Chester: Operational Flexibility | 0 | 0 | 0 |
| Bangor: Turnback Facility | 0 | 0 | 0 |
| Total track & signalling IOS | 1 | 0 | -1 |

There are no significant variances in the above table.

Route 13 – South Trans - Pennine

| Route 13 | London North Eastern Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 12 | 24 | 12 |
| Signalling | 6 | 4 | -2 |
| Structures | 4 | 4 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 1 | 0 | -1 |
| Total renewals | 26 | 34 | 8 |
| Committed enhancements | | | |
| TPWS | 5 | 4 | -1 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 5 | 4 | -1 |
| Track and signalling IOS | | | |
| Sheffield – Lincoln: Capacity | N/A | 0 | 0 |
| Dore Junction: Operational flexibility | 1 | 0 | -1 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: Of the £12m variance, £4m was as a result of additional work to mitigate Gauge Corner Cracking (GCC) and £6m was as a result of additional S&C works, which re-prioritised on to this route. The remainder of the variance is due to other minor reasons and rounding.

Signalling: The £2m variance is due to the following schemes being re-programmed as a result of a restricted signalling resource: Signalling interlockings, signalling support systems, SPAD works, level crossing renewals and minor renewals. Life extension was not required.

| Route 13 North West Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|-------------------------------------------|--|--------------|----------|-----------|
| Renewals | | | | |
| Track | | 2 | 2 | 0 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 2 | 2 | 0 |
| Electrification | | 0 | 0 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 0 | 0 | 0 |
| Stations | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 5 | 4 | -1 |
| Committed enhancements | | | | |
| TPWS | | 3 | 1 | -2 |
| Other | | 0 | 0 | 0 |
| Total committed enhancements | | 3 | 1 | -2 |

There are no significant variances in the above table.

Route 14 – Edinburgh to Glasgow and Edinburgh to Aberdeen and Inverness

| Route 14 | Scotland Zone expenditure (£m) | | |
|----------------------------------------------------|--------------------------------|-----------|------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 7 | 12 | 5 |
| Signalling | 12 | 4 | -8 |
| Structures | 24 | 26 | 2 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 1 | 1 | 0 |
| Telecoms | 2 | 0 | -2 |
| Stations | 8 | 2 | -6 |
| Depots | 2 | 1 | -1 |
| Lineside Buildings | 1 | 1 | 0 |
| Total renewals | 57 | 47 | -10 |
| Committed enhancements | | | |
| TPWS | 7 | 5 | -2 |
| Other | 3 | 4 | 1 |
| Total committed enhancement | 10 | 9 | -1 |
| Track and signalling IOS | | | |
| Glasgow Queen Street - Dundee: Additional capacity | 0 | 0 | 0 |
| Aberdeen-Inverness: Additional capacity Orton Loop | 0 | 0 | 0 |
| Dunblane turnback facility | 0 | 0 | 0 |
| Perth-Inverness: Improved journey time | 0 | 0 | 0 |
| Glasgow-Perth: Improved journey time | 0 | 0 | 0 |
| Edinburgh Waverley to Perth: Improved journey time | 1 | 0 | -1 |
| Forth Bridge Signalling Alteration | 0 | 0 | 0 |
| Total track & signalling IOS | 2 | 0 | -2 |

Track: The £5m variance is as a result of £2m additional Gauge Corner Cracking (GCC) works and £4m additional track works due to reprioritisation of renewals on sections of the route with heavy coal traffic to Longannet.

Signalling: The £8m additional expenditure is as a result of a combination of reasons. Of the planned £8m signalling element of Edinburgh signalling renewals, only £2m was spent, due to extended project scoping and design, although works are now taking place on site. Perth signalling renewals to the value of £1m were deferred due to signalling engineering resources being re-prioritised, but again works are now taking place on site. The remainder of the signalling shortfall was caused by re-prioritisation of a number of minor works packages across the route.

Telecoms: The £2m variance is due to the planned £1m telecoms element of Edinburgh signalling renewals being deferred to 2002/3, as mentioned above. Signal post Telephone (SPT) concentrator renewals were deferred due to product approval and finalisation of the technical specification (£1m).

Stations: Perth station works did not start when planned, due to ongoing discussions with the local authority on listed building status, but works are now progressing on site. CIS renewals were deferred due to delays in finalising scope and long lead times for equipment.

Depots: Inverness depot remodelling was deferred due to a re-scoping exercise with the TOC. Work is expected to occur in 2002/3.

TPWS: Timescales for the installation at Edinburgh Waverley changed due to delays to the interlocking renewal scheme.

Other: The Aberdeen / Inverness Automatic Warning System (AWS) project scope was greater than originally anticipated

Route 15 – West Anglia Main Line and Branches

| Route 15 | East Anglia Zone expenditure (£m) | | |
|---------------------------------------------------------|-----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 11 | 27 | 16 |
| Signalling | 31 | 26 | -5 |
| Structures | 3 | 3 | 0 |
| Electrification | 10 | 18 | 8 |
| Plant & Machinery | 4 | 1 | -3 |
| Telecoms | 4 | 3 | -1 |
| Stations | 1 | 4 | 3 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 64 | 82 | 18 |
| Committed enhancements | | | |
| Thameslink 2000 (subject to procurement review) | 0 | 0 | 0 |
| TPWS | 2 | 0 | -2 |
| Total committed enhancements | 2 | 0 | -2 |
| Track and signalling IOS | | | |
| Peterborough – Stansted Airport: Journey time reduction | 0 | 0 | 0 |
| Ely-Norwich: Capacity/Flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: Of the £16m additional expenditure, £10m was as a result of additional plain line and S&C work to mitigate Gauge Corner Cracking (GCC), £2m was as a result of additional expenditure to improve track quality on rural routes, £4m was due to the West Anglia Route Modernisation (WARM) project, where the forecast showed this expenditure in another asset category. The remainder is as a result of other items such as some additional track renewals and greater than anticipated cost of scrap removal.

Signalling & Electrification: The £8m additional expenditure on Electrification and £5m variance on signalling is attributable to the WARM project, where the classification of works by asset category was changed.

Plant and Machinery: The £3m variance was due to a number of small schemes, whose expenditure was either lower than forecast or their asset category was changed.

Stations: The £3m additional expenditure on was due to the Station Regeneration Scheme continuing to spend during 2001/02, which was not forecast in the NMS.

Route 16 – Great Eastern Main Line and Branches

| Route 16 | East Anglia Zone expenditure (£m) | | |
|-------------------------------------------|-----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 18 | 23 | 5 |
| Signalling | 6 | 3 | -3 |
| Structures | 3 | 3 | 0 |
| Electrification | 1 | 1 | 0 |
| Plant & Machinery | 1 | 1 | 0 |
| Telecoms | 4 | 1 | -3 |
| Stations | 2 | 4 | 2 |
| Depots | 1 | 0 | -1 |
| Lineside Buildings | 1 | 1 | 0 |
| Total renewals | 38 | 37 | -1 |
| Committed enhancements | | | |
| Ipswich Station Car Park | 3 | 3 | 0 |
| TPWS | 7 | 7 | 0 |
| Other | 0 | 4 | 4 |
| Total committed enhancements | 10 | 14 | 4 |
| Track and signalling IOS | | | |
| Ipswich-Lowestoft Capacity | 1 | 0 | -1 |
| Norwich-Great Yarmouth/Lowestoft capacity | 0 | 0 | 0 |
| Ipswich-Peterborough 1 TPH | 0 | 0 | 0 |
| Norwich-Lowestoft | 0 | 0 | 0 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: The £5m additional expenditure is attributable to additional Gauge Corner Cracking (GCC) works, both plain line and S&C, and also to increased scrap removal costs.

Signalling: The £3m variance is as a result of risk mitigation at user worked level crossings and the Colchester to Clacton life extension works. Both projects were re-phased into later years in the business plan, as a result of limited signalling resources.

Telecoms: The £3m variance is attributable to a number of schemes. The main one is the renewal of Customer Information Systems (CIS), which was delayed whilst awaiting agreement from the customer about the final scope of the project.

Other: The variance is as a result of a re-classification of some of the expenditure for Liverpool Street Station from Renewal to enhancement.

Route 17 – London, Tilbury and Southend

| Route 17 | East Anglia Zone expenditure (£m) | | |
|-----------------------------------------|-----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 2 | 7 | 5 |
| Signalling | 1 | 4 | 3 |
| Structures | 3 | 3 | 0 |
| Electrification | 1 | 1 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Depots | 0 | 1 | 1 |
| Total renewals | 7 | 16 | 9 |
| Committed enhancements | | | |
| TPWS | 3 | 3 | 0 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 3 | 3 | 0 |
| Track and signalling IOS | | | |
| West Ham crossover | 1 | 0 | -1 |
| Upminster crossover | 1 | 0 | -1 |
| Benfleet crossover | 1 | 0 | -1 |
| Total track & signalling IOS | 3 | 0 | -3 |

Track: The additional £5m expenditure on renewals is all attributable to additional Gauge Corner Cracking (GCC) works, both plain line and S&C, as well as to scrap removal costs.

Signalling: The £3m additional expenditure is due to a number of Performance Improvement schemes and other minor renewals. The actual spend on these items was greater on this route than the NMS forecast, which was based on a disaggregation of the Zonal budget.

Route 18 – Chatham Main Line and North Kent

| Route 18 | Southern Zone expenditure (£m) | | |
|-------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 11 | 10 | -1 |
| Signalling | 14 | 9 | -5 |
| Structures | 8 | 11 | 3 |
| Electrification | 4 | 2 | -3 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 3 | 1 | -2 |
| Depots | 0 | 0 | 0 |
| Total renewals | 41 | 32 | -9 |
| Committed enhancements | | | |
| TPWS | 5 | 5 | 0 |
| Other | 0 | 1 | 1 |
| Total committed enhancements | 6 | 6 | 0 |

Signalling: The £5m variance is attributable to the protracted design and implementation of the Sheerness Resignalling project, which meant that less was spent than originally forecast. The remainder of the variance (£3m) is due to the release of contingency following the successful final commissioning of the Dartford Area Resignalling project, which was delivered below budget.

Structures: The variance is due to actual expenditure including an element of reactive and other works, which were carried out on this route. These works were forecast in the Zonal table, but as their location was not in all cases known, they were not disaggregated into route tables.

Electrification: Projects were re-prioritised to provide resources for development of the Southern Region Power Supply Upgrade project, for the introduction of new rolling stock, as described in the Zonal table.

Route 19 – Brighton Main Line and South London Network

| Route 19 | Southern Zone expenditure (£m) | | |
|-------------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 19 | 17 | -2 |
| Signalling | 26 | 23 | -3 |
| Structures | 4 | 9 | 5 |
| Electrification | 3 | 1 | -2 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 2 | 1 | -1 |
| Stations | 6 | 6 | 0 |
| Depots | 6 | 4 | -3 |
| Total renewals | 65 | 60 | -5 |
| Committed enhancements | | | |
| Thameslink 2000 (subject to procurement review) | 37 | 26 | -11 |
| TPWS | 5 | 6 | 1 |
| Other | 0 | 6 | 6 |
| Total committed enhancements | 43 | 38 | -5 |
| Track and signalling IOS | | | |
| Keymer Junction - Hastings: Journey Time | 0 | 0 | 0 |
| Clapham to Mitre Bridge | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Structures: The £5m additional expenditure was as a result of unforeseen supplementary works at Coulsdon Culvert, which involved re-building the structure.

Electrification: Projects were re-prioritised to provide resources for development of the Southern Region Power Supply Upgrade project, for the introduction of new rolling stock, as described in the Zonal table.

Telecoms: The variance was as a result of difficulties in letting the feasibility contract for Driver Only Operation (DOO) works and due to resource constraints affecting development of a large number of schemes across the Region.

Depots: The variance was as a result of changes to the programme for works at Victoria and Stewarts Lane.

Thameslink 2000: The variance is as a result of delays following the SRA procurement review and subsequent continuing negotiations regarding ongoing responsibility for the project.

Route 20 – South Coastal Route: Portsmouth to Ashford

| Route 20 | Southern Zone expenditure (£m) | | |
|----------------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 2 | 2 | 0 |
| Signalling | 1 | 3 | 2 |
| Structures | 2 | 3 | 1 |
| Electrification | 2 | 1 | -1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 0 | -1 |
| Stations | 6 | 3 | -3 |
| Total renewals | 14 | 11 | -3 |
| Committed enhancements | | | |
| Thameslink 2000 (subject to procurement review) | 1 | 1 | -1 |
| TPWS | 1 | 1 | 0 |
| Total committed enhancements | 2 | 2 | -1 |
| Track and signalling IOS | | | |
| Havant-Brighton journey time improvements | 1 | 0 | -1 |
| Total track & signalling IOS | 1 | 0 | -1 |

Stations: £3m was deferred to 2002/03 and 2003/04 for the Hastings Station Regeneration scheme, following protracted negotiations with Local Authorities.

Route 21 – London to Portsmouth and Weymouth

| Route 21 | Southern Zone expenditure (£m) | | |
|----------------------------------------------------|--------------------------------|-----------|------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 16 | 14 | -2 |
| Signalling | 31 | 20 | -11 |
| Structures | 8 | 10 | 2 |
| Electrification | 3 | 1 | -2 |
| Plant & Machinery | 0 | 1 | 1 |
| Telecoms | 6 | 5 | -1 |
| Stations | 24 | 14 | 7 |
| Depots | 4 | 2 | -2 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 92 | 68 | -24 |
| Committed enhancements | | | |
| TPWS | 10 | 11 | 1 |
| Thameslink 2000 (subject to procurement review) | 0 | 0 | 0 |
| Waterloo Station | 0 | 17 | 17 |
| Other | 8 | 4 | -4 |
| Total committed enhancements | 18 | 32 | 14 |
| Track and signalling IOS | | | |
| Farnborough: S&C speed increase | 0 | 0 | 0 |
| Southampton Central | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Signalling: Variance of £11m. A shortage of internal and contractor resources necessitated diversion of resources onto the Pooley Green Level Crossing project, due to its safety implications, causing a total variance of £3.4m. Basin Road and Stockbridge level crossing schemes were deferred. The detailed design for Sturry and St Dunstons Level crossings was also deferred for similar reasons. A shortage of contractor and internal resources was also responsible for a £1m variance on Wessex Performance Schemes, £1.2m on maintainer renewals £1.2m and £1m on Vital Frequency Division Multiplexer (FDM) Safety Remedials. Drayton & Bramley Level Crossing conversion to CCTV which was originally included within the renewals forecast was transferred to enhancements during 2001/02, thus adding another £2m to the variance above.

Structures: The variance is due to actual expenditure including an element of reactive and other works, which were carried out on this route. These works were forecast in the Zonal table, but as their location was not in all cases known, they were not disaggregated into route tables.

Electrification: Projects were re-prioritised to provide resources for development of the Southern Region Power Supply Upgrade, for introduction of new rolling stock, as described in the Zonal table.

Telecoms: Feasibility for Raynes Park Electrical Control Room (ECR) was extended to allow clarification of project risks and costs, resulting in £0.5m being deferred to 2003/04.

Stations & Waterloo Station: The enhancement element of Waterloo station work was incorrectly classified in the NMS as renewal and was included in the stations category (£19m of the £24m forecast). It is correctly shown as enhancement in the actuals column (£17m).

Route 22 – Wessex routes

| Route 22 | Southern Zone expenditure (£m) | | |
|---------------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 3 | 0 |
| Signalling | 2 | 1 | -1 |
| Structures | 4 | 5 | 1 |
| Electrification | 1 | 0 | -1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 2 | 1 | -2 |
| Stations | 3 | 1 | -2 |
| Total renewals | 16 | 11 | -5 |
| Committed enhancements | | | |
| TPWS | 2 | 2 | 0 |
| Total committed enhancements | 2 | 2 | 0 |
| Track and signalling IOS | | | |
| Bristol – Weymouth capacity increase | 0 | 0 | 0 |
| Waterloo – Salisbury | N/A | 0 | 0 |
| Portsmouth to Eastleigh Power Supply Enhancements | N/A | 0 | 0 |
| Bristol to Portsmouth Capacity | N/A | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

There are no significant variances in the above table.

| Route 22 Great Western Zone expenditure (£m) | | | |
|-----------------------------------------------------|---------------------|---------------|-----------------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 2 | 4 | 2 |
| Signalling | 0 | 0 | 0 |
| Structures | 1 | 1 | 0 |
| Telecoms | 0 | 0 | 0 |
| Total renewals | 3 | 5 | 2 |
| Committed enhancements | | | |
| TPWS | 1 | 0 | -1 |
| Total committed enhancements | 1 | 0 | -1 |

Track: £2m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Route 23 – Clapham Junction to Reading and branches

| Route 23 | Southern Zone expenditure (£m) | | |
|----------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 6 | 5 | -1 |
| Signalling | 1 | 2 | 1 |
| Structures | 4 | 5 | 1 |
| Electrification | 2 | 1 | -1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 2 | 4 | 2 |
| Stations | 3 | 1 | -2 |
| Depots | 2 | 1 | -1 |
| Total renewals | 20 | 19 | -1 |
| Committed enhancements | | | |
| TPWS | 2 | 2 | 0 |
| Cross Country Route Modernisation | 5 | 0 | -5 |
| Other | 0 | 2 | 2 |
| Total committed enhancements | 6 | 4 | -2 |
| Track and signalling IOS | | | |
| Reading – Redhill: Journey time improvements | 1 | 0 | -1 |
| Waterloo – Reading Capacity | N/A | 0 | 0 |
| Total track & signalling IOS | 1 | 0 | -1 |

Cross Country Route Modernisation: The £5m variance is as a result of this part of the wider project not progressing beyond the feasibility stage. The feasibility stage has shown, as agreed between Virgin Cross Country and Railtrack, that upgrading this part of the route had an insufficient business case.

Route 24 – Isle of Wight: Ryde to Shanklin

| Route 24 | Southern Zone expenditure (£m) | | |
|-----------------------|--------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 0 | 0 | 0 |
| Structures | 0 | 0 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Total renewals | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 25 – Chiltern Lines

| Route 25 | Midlands Zone expenditure (£m) | | |
|-------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 7 | 10 | 3 |
| Signalling | 3 | 3 | 0 |
| Structures | 8 | 6 | -2 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 3 | 0 | -3 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 22 | 20 | -2 |
| Committed enhancements | | | |
| TPWS | 3 | 1 | -2 |
| Project Evergreen | 0 | 22 | 22 |
| Total committed enhancements | 3 | 23 | 20 |

Track: The £3m additional expenditure is due to an increased level of rerailing to prevent / repair sites affected by Gauge Corner Cracking (GCC), and some renewal schemes not included in the forecast.

Structures: The £2m variance is due to re-programming one item to 2002/03 when by a higher priority job required the possession and the other to 2002/03 due to foot and mouth restrictions in the area.

Telecoms: The £3m lower spend relates mainly to re-scheduling the scheme to address Cab Secure Radio (CSR) blackspots, due to a lack of contractor resources to take this scheme forward. The scheme has been reprogrammed for development and implementation in 2002/3 and 2003/4.

Project Evergreen: Doubling of the single track between Aynho and Bicester (Project Evergreen 1A) resulted in £22m expenditure in 2001/02. The scheme provides 15km of additional track, together with associated civil engineering, signalling and telecoms works to facilitate improved services and greater operational flexibility for Chiltern Railways. It was not included in the NMS forecast as it was not committed at the date of publication. It is now due for completion during 2002/3.

Route 26 – North London Line Routes

| Route 26 | East Anglia Zone expenditure (£m) | | |
|----------------------------------------------------------------|-----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 5 | 1 |
| Signalling | 1 | 3 | 2 |
| Structures | 4 | 5 | 1 |
| Electrification | 1 | 1 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 0 | -1 |
| Stations | 1 | 1 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 12 | 15 | 3 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 1 | 1 | 0 |
| Track and signalling IOS | | | |
| Willesden High Level Turnback & Box resignalling | 0 | 0 | 0 |
| West London line to south west sidings operational flexibility | 0 | 0 | 0 |
| Barking: Operational flexibility | 0 | 0 | 0 |
| Kensal Green to Willesden Jcn via City Goods Line | N/A | 0 | 0 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: The £1m additional expenditure was due to additional plain line and S&C Gauge Corner Cracking works.

Signalling: The £2m additional expenditure is due to the North London Line resignalling project. The project scope changed during the development phase. There was also an increase in cost due to higher prices, as a result of a shortage of resource within the signalling industry.

Route 27 – Cotswolds

| Route 27 | Great Western Zone expenditure (£m) | | |
|-------------------------------------------------------------------|-------------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 7 | 3 |
| Signalling | 0 | 0 | 0 |
| Structures | 2 | 2 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Depots | 0 | 0 | 0 |
| Total renewals | 6 | 9 | 3 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Total committed enhancements | 1 | 0 | 0 |
| Track and signalling IOS | | | |
| Droitwich – Worcester Foregate Street: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £3m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Route 28 – Cardiff Valleys

| Route 28 | Great Western Zone expenditure (£m) | | |
|-----------------------------------------|-------------------------------------|-----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 8 | 3 |
| Signalling | 1 | 1 | 0 |
| Structures | 1 | 1 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 0 | 1 | 1 |
| Total renewals | 8 | 11 | 3 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Total committed enhancements | 1 | 1 | 0 |
| Track and signalling IOS | | | |
| Barry Town: Operational Flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £3m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Route 29 – West Wales

| Route 29 | Great Western Zone expenditure (£m) | | |
|-----------------------------------------------|-------------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 6 | 2 |
| Signalling | 0 | 0 | 0 |
| Structures | 1 | 1 | 0 |
| Telecoms | 0 | 0 | 0 |
| Total renewals | 5 | 7 | 2 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Total committed enhancements | 1 | 1 | 0 |
| Track and signalling IOS | | | |
| Cockett-Duffryn West: Operational flexibility | 0 | 0 | 0 |
| Swansea West Loop: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: £2m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Route 30 – West Midlands local routes

| Route 30 | Midlands Zone expenditure (£m) | | |
|----------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 8 | 8 | 0 |
| Signalling | 1 | 1 | 0 |
| Structures | 3 | 3 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 1 | 0 | -1 |
| Telecoms | 1 | 0 | -1 |
| Stations | 1 | 1 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 15 | 13 | -2 |
| Committed enhancements | | | |
| TPWS | 2 | 1 | -1 |
| Total committed enhancements | 2 | 1 | -1 |
| Track and signalling IOS | | | |
| Kidderminster: Operational flexibility | 0 | 0 | 0 |
| Stourbridge Junction: Additional capacity | 0 | 0 | 0 |
| Stratford-upon-Avon: Operational flexibility | 0 | 0 | 0 |
| Longbridge – Blake Street | N/A | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 31 – East Midlands local routes

| Route 31 | London North Eastern Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 2 | -1 |
| Signalling | 0 | 0 | 0 |
| Structures | 2 | 2 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Stations | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 5 | 4 | -1 |
| Committed enhancements | | | |
| Other | 2 | 2 | 0 |
| Total committed enhancements | 2 | 2 | 0 |
| Track and signalling IOS | | | |
| Sleaford – Lincoln: Additional capacity | N/A | 0 | 0 |
| Total track & signalling IOS | N/A | 0 | 0 |

There are no significant variances in the above table.

| Route 31 Midlands Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|-----------------------------------------|--|--------------|----------|-----------|
| Renewals | | | | |
| Track | | 2 | 2 | 0 |
| Signalling | | 2 | 2 | 0 |
| Structures | | 2 | 2 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 0 | 0 | 0 |
| Stations | | 0 | 0 | 0 |
| Depots | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 8 | 6 | -2 |
| Committed enhancements | | | | |
| TPWS | | 2 | 1 | -1 |
| Total committed enhancements | | 2 | 1 | -1 |
| Track and signalling IOS | | | | |
| Crewe – Nottingham: journey time | | 0 | 0 | 0 |
| Total track & signalling IOS | | 0 | 0 | 0 |

There are no significant variances in the above table.

| Route 31 North West Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|-------------------------------------------|--|--------------|----------|----------|
| Renewals | | | | |
| Track | | 0 | 0 | 0 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 0 | 0 | 0 |
| Stations | | 0 | 0 | 0 |
| Total renewals | | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 32 – Merseyside

| Route 32 | North West Zone expenditure (£m) | | |
|-----------------------------------------|----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 10 | 6 |
| Signalling | 1 | 0 | -1 |
| Structures | 1 | 1 | 0 |
| Electrification | 5 | 5 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 0 | -1 |
| Stations | 3 | 2 | -1 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 15 | 18 | 3 |
| Committed enhancements | | | |
| Wheelchex | 1 | 1 | -1 |
| TPWS | 9 | 2 | -7 |
| Other | 1 | 0 | -1 |
| Total committed enhancements | 10 | 3 | -8 |
| Track and signalling IOS | | | |
| Olive Mount Chord | 0 | 0 | 0 |
| James Street: Turnback facility | 0 | 0 | 0 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: The additional expenditure was due to the Liverpool to Southport blockade. This additional work was carried out as track condition was deteriorating more rapidly than anticipated.

Route 33 – Manchester to the coast

| Route 33 | North West Zone expenditure (£m) | | |
|--------------------------------------------------------------|----------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 7 | 7 | 0 |
| Signalling | 4 | 2 | -2 |
| Structures | 3 | 3 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 4 | 2 | -2 |
| Depots | 1 | 1 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 19 | 15 | -4 |
| Committed enhancements | | | |
| TPWS | 1 | 2 | 1 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 2 | 2 | 0 |
| Track and signalling IOS | | | |
| Wigan Wallgate: Turnback Facility | 0 | 0 | 0 |
| Hazel Grove to Furness Vale: Capacity increase | 0 | 0 | 0 |
| Manchester Piccadilly – New Mills Central journey time | N/A | 0 | 0 |
| Rochdale – Manchester Victoria – Wigan Wallgate journey time | N/A | 0 | 0 |
| Manchester Piccadilly – Marple journey time | N/A | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Stations: The £2m variance was due to work planned for Salford Central and Ashton being deferred, to potentially allow incorporation of outside party schemes. Some spend is likely to occur in 2002/03.

Route 34 – Lancashire

| Route 34 | North West Zone expenditure (£m) | | |
|-----------------------------------------------|----------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 5 | -1 |
| Signalling | 1 | 0 | -1 |
| Structures | 3 | 2 | -1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 10 | 8 | -3 |
| Committed enhancements | | | |
| TPWS | 3 | 1 | -2 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 3 | 1 | -2 |
| Track and signalling IOS | | | |
| Blackburn – Manchester: Capacity improvement | N/A | 0 | 0 |
| Blackburn – Manchester Victoria: Journey time | N/A | 0 | 0 |
| Total track & signalling IOS | N/A | 0 | 0 |

There are no significant variances in the above table.

Route 35 – Cumbria

| Route 35 | North West Zone expenditure (£m) | | |
|---------------------------------------------|----------------------------------|-----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 4 | 9 | 5 |
| Signalling | 1 | 0 | -1 |
| Structures | 3 | 4 | 1 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 2 | 2 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 11 | 15 | 4 |
| Committed enhancements | | | |
| TPWS | 1 | 1 | 0 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 1 | 1 | 0 |
| Track and signalling IOS | | | |
| Camforth – Barrow: Journey time improvement | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: The £5m additional expenditure was as a result of renewal work being brought forward and carried out during a blockade on the Windermere branch, to achieve efficiencies.

Route 36 – Yorkshire

| Route 36 | London North Eastern Zone expenditure (£m) | | |
|--------------------------------------------|--------------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 12 | 7 | -5 |
| Signalling | 9 | 6 | -3 |
| Structures | 5 | 5 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 0 | 0 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 28 | 19 | -9 |
| Committed enhancements | | | |
| Class 333 operation on W Yorkshire Network | 2 | 2 | 0 |
| TPWS | 5 | 4 | -1 |
| Other | 1 | 1 | 0 |
| Total committed enhancements | 8 | 7 | -1 |
| Track and signalling IOS | | | |
| Sheffield – York: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

The £5m variance on track renewals is attributable to a smaller than forecast volume of Gauge Corner Cracking (GCC) work on this route. The NMS forecast was a disaggregation of the total Zonal project. Actual expenditure was greater than forecast on other routes and less than forecast on this route.

Signalling: The £3m variance is due to the following schemes being re-programmed as a result of a restricted signalling resource, which was re-prioritised on to the WCRM project. Signalling interlockings, signalling support systems, SPAD works, level crossing renewals and minor renewals. The projects did not require any life extension work to be carried out in the short term.

| Route 36 North West Zone expenditure (£m) | | NMS Forecast | Actual | Variance |
|--------------------------------------------------|--|---------------------|---------------|-----------------|
| Renewals | | | | |
| Track | | 0 | 0 | 0 |
| Signalling | | 0 | 0 | 0 |
| Structures | | 8 | 4 | -4 |
| Electrification | | 0 | 0 | 0 |
| Plant & Machinery | | 0 | 0 | 0 |
| Telecoms | | 0 | 0 | 0 |
| Stations | | 0 | 0 | 0 |
| Lineside Buildings | | 0 | 0 | 0 |
| Total renewals | | 8 | 4 | -4 |
| Committed enhancements | | | | |
| TPWS | | 2 | 1 | -1 |
| Settle – Carlisle route upgrade | | 1 | 7 | 6 |
| Other | | 0 | 1 | 1 |
| Total committed enhancements | | 3 | 9 | 6 |

Settle – Carlisle route upgrade: The variance is as a result of the increased cost of upgrading the route for heavy coal traffic.

Route 37 – North East England

| Route 37 | London North Eastern Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 11 | 6 |
| Signalling | 3 | 2 | -1 |
| Structures | 3 | 3 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 1 | 1 | 0 |
| Lineside Buildings | 2 | 1 | -1 |
| Total renewals | 13 | 19 | 6 |
| Committed enhancements | | | |
| Sunderland Direct | 84 | 84 | 0 |
| TPWS | 4 | 3 | -1 |
| Other | 1 | 1 | 0 |
| Total committed enhancements | 89 | 88 | -1 |
| Track and signalling IOS | | | |
| Sunderland – Middlesbrough | 1 | 0 | -1 |
| Newcastle – Carlisle | 1 | 0 | -1 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: The £6m additional expenditure is attributable to a greater number of plain line track renewals taking place on this route compared with the planned volume. The track renewal work bank was re-prioritised after the NMS forecast was compiled.

Sunderland Direct: To allow direct comparison between the NMS forecast and actual expenditure, the contribution from NEXUS toward the cost of this scheme is included in the figures.

Route 38 – South West Scotland

| Route 38 | Scotland Zone expenditure (£m) | | |
|-----------------------------------------|--------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 0 | 1 | 1 |
| Signalling | 1 | 0 | -1 |
| Structures | 2 | 2 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 1 | 0 | -1 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 4 | 3 | -1 |
| Committed enhancements | | | |
| Scotland Zone | | | |
| TPWS | 1 | 1 | 0 |
| Other | 3 | 0 | -3 |
| Total committed enhancements | 4 | 1 | -3 |
| Track and signalling IOS | | | |
| Dumfries turnback facility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: Additional £1m renewals were required on a rural route due to heavy freight volumes.

Other: The £3m variance is due to postponement of the Automatic Warning System (AWS) installation on the Stranraer route postponed, due to resource constraints.

| Route 38 | North West Zone expenditure (£m) | | |
|-----------------------|----------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 0 | 0 | 0 |
| Signalling | 0 | 0 | 0 |
| Structures | 0 | 0 | 0 |
| Total renewals | 0 | 0 | 0 |

There are no significant variances in the above table.

Route 39 – Strathclyde

| Route 39 | Scotland Zone expenditure (£m) | | |
|---------------------------------------------------------------------------------------------------------|--------------------------------|-----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 12 | 24 | 12 |
| Signalling | 10 | 5 | -5 |
| Structures | 8 | 10 | 2 |
| Electrification | 2 | 1 | -1 |
| Plant & Machinery | 1 | 0 | -1 |
| Telecoms | 5 | 2 | -3 |
| Stations | 3 | 3 | 0 |
| Depots | 2 | 1 | -1 |
| Lineside Buildings | 0 | 1 | 1 |
| Total renewals | 43 | 47 | 4 |
| Committed enhancements | | | |
| Mossend Yard Improvements | 4 | 3 | -1 |
| TWPS | 7 | 5 | -2 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 11 | 8 | -3 |
| Track and signalling IOS | | | |
| Glasgow Central-Shotts via Whifflet: Additional capacity | 0 | 0 | 0 |
| Glasgow Queen Street-Cumbernauld: Additional capacity | 0 | 0 | 0 |
| Glasgow Central-East Kilbride: Additional capacity | 0 | 0 | 0 |
| Kilmarnock –Glasgow Central (including through services to Stranraer and Carlisle): Additional capacity | 1 | 0 | -1 |
| East Kilbride-Glasgow Central: Capacity | 0 | 0 | 0 |
| Glasgow Queen Street – Helensburgh: Improved journey times | 0 | 0 | 0 |
| Glasgow – Ayr/Gourock: Improved journey times | 0 | 0 | 0 |
| Deanside Branch: Operational flexibility | 0 | 0 | 0 |
| Glasgow Central – Ayr: Platform Extension Capacity | 0 | 0 | 0 |
| Ayr – Glasgow Central: Additional Capacity | 0 | 0 | 0 |
| Total track & signalling IOS | 2 | 0 | -2 |

Track: The £12m additional expenditure is as a result of Gauge Corner Cracking (GCC) mitigation and repair works (£7m), as well as other track renewals associated with heavy freight traffic to / from Hunterston / Ayrshire (£5m).

Signalling: The £5m is due to writing off previously incurred expenditure on Strathclyde Crossrail, following a decision not to proceed with this scheme (£1.5m). Re-phasing of wire degradation works at Polmadie, Rutherglen, Paisley and other locations due to reassessment of asset condition and life expectancy were responsible for a reduction in expenditure of £1m. Reassessment of condition of cables supplying power to Cathcart signal box accounted for £0.6m. Time Division Multiplexer (TDM) replacement between Paisley Signalling Centre and Dunrod & Wemyss Bay relay rooms and at Cathcart Signalling Centre was delayed due to contractual difficulties (£1.3m), but work is now in progress. A number of other minor schemes were also delayed due to engineering resource shortages

Structures: The £2m additional expenditure comprises of £0.5m for additional retaining wall works at Paisley, £2m for additional bridge and other structure repairs following condition re-assessments and a £0.5m reduction for repairs at Dalmuir tunnels, which were re-scheduled but are now complete.

Electrification:: The £1m variance is due to long lead times for renewal of Track Sectioning Cabins at Cathcart & Coatbridge, to permit installation of indoor switchgear. Work is now taking place.

Plant & Machinery: The £1m variance results from re-phasing of the Glasgow Central Signalling Centre power supply design, due to changes to the specification of the signalling interlocking. Uninterruptible Power Supply (UPS) installation was also delayed due to extended type approval.

Telecoms: The £3m variance includes £2m due to ongoing discussion with customers and stakeholders on the detailed scope of work for the Customer information Systems (CIS), and to long equipment lead times. The remainder is due to reductions in cost for the SMA life extension works and re-scheduling of various minor other telecoms renewals associated with signalling schemes.

Depots: The variance is due to re-phasing & re-prioritisation of roof repair work at Shields depot

Route 40 – Edinburgh and Fife

| Route 40 | Scotland Zone expenditure (£m) | | |
|-------------------------------------------------|--------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 0 | -3 |
| Signalling | 1 | 0 | -1 |
| Structures | 0 | 0 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Stations | 1 | 1 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 5 | 1 | -4 |
| Committed enhancements | | | |
| TPWS | 4 | 3 | -1 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 4 | 3 | -1 |
| Track and signalling IOS | | | |
| Bathgate Edinburgh Waverley: Platform extension | 0 | 0 | 0 |
| Fife Circle: Platform extension | 1 | 0 | -1 |
| Total track & signalling IOS | 1 | 0 | -1 |

Track: The variance is a result of re-prioritisation of works, to deal with Gauge Corner Cracking (GCC) on higher speed routes.

Signalling: The variance is as a result of timescale changes for the Edinburgh Waverley signalling renewals project (see route 14).

Route 41 – Highlands

| Route 41 | Scotland Zone expenditure (£m) | | |
|-------------------------------------------------------------------|--------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 1 | -2 |
| Signalling | 2 | 1 | -1 |
| Structures | 4 | 5 | 1 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 1 | 1 | 0 |
| Stations | 0 | 0 | 0 |
| Depots | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 10 | 8 | -2 |
| Committed enhancements | | | |
| TPWS | 6 | 0 | -6 |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 6 | 0 | -6 |
| Track and signalling IOS | | | |
| Craigendoran Junction to Fort William: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: The variance is a result of re-prioritisation of works, to deal with Gauge Corner Cracking (GCC) on higher speed routes.

Signalling: The variance is due to a re-assessment of the accounting classification for closure of user working level crossings, from capital to operating expenditure.

Structures: The variance is due to emergency construction of new causeway on the Kyle line, to avoid the rock fall area.

TPWS: The requirement to develop specialised TPWS equipment for Radio Electronic Token Block (RETB) signalling areas has delayed implementation of the system on this route.

Route 42 – Southern England and South Wales Freight

| Route 42 | Great Western Zone expenditure (£m) | | |
|-------------------------------------|-------------------------------------|----------|-----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 5 | 2 |
| Signalling | 1 | 0 | -1 |
| Structures | 4 | 1 | -3 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Total renewals | 8 | 6 | -2 |
| Committed enhancements | | | |
| Portishead Branch Reopening | 5 | 4 | -1 |
| TPWS | 1 | 0 | -1 |
| Total Committed Enhancements | 5 | 4 | -1 |

Track: £2m additional expenditure. There was the opportunity to accelerate the Plain Line track and S&C programme, bringing forward work planned for 2002/03. The work was associated with a number of sites. The increase in activity also called upon additional Freight Haulage, with an associated additional cost. The costs of work carried out at a number of GCC sites was under-estimated in the forecast, contributing to the increase.

Structures: The £3m variance is as a result of a general re-prioritisation of resources, to deal with emergency repairs following embankment slips on other routes in the Zone.

Route 43 – Midlands freight only routes

| Route 43 | Midlands Zone expenditure (£m) | | |
|-----------------------|--------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 5 | 5 | 0 |
| Signalling | 0 | 0 | 0 |
| Structures | 4 | 4 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 9 | 9 | 0 |

There are no significant variances in the above table.

Route 44 – Northern England Freight

| Route 44 | London North Eastern Zone expenditure (£m) | | |
|-------------------------------------|--------------------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 7 | 4 |
| Signalling | 0 | 0 | 0 |
| Structures | 2 | 2 | 0 |
| Electrification | 0 | 0 | 0 |
| Plant & Machinery | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 6 | 9 | 3 |
| Committed enhancements | | | |
| Other | 0 | 0 | 0 |
| Total committed enhancements | 0 | 0 | 0 |

Track: £4m variance is due to a higher than forecast level of plain line track renewals taking place, following a track inspection, in order to improve the quality of track on this route.

Route 45 – Scotland freight only routes

| Route 45 | Scotland Zone expenditure (£m) | | |
|------------------------------------------------------------------------------|--------------------------------|----------|----------|
| | NMS Forecast | Actual | Variance |
| Renewals | | | |
| Track | 3 | 2 | -1 |
| Signalling | 0 | 0 | 0 |
| Structures | 1 | 2 | 1 |
| Lineside Buildings | 0 | 0 | 0 |
| Total renewals | 4 | 4 | 0 |
| Track and signalling IOS | | | |
| Falklands Yard and Shields Junction Burma Road Line: Operational flexibility | 0 | 0 | 0 |
| Total track & signalling IOS | 0 | 0 | 0 |

Track: The variance is a result of re-prioritisation of works, to deal with Gauge Corner Cracking (GCC) on higher speed routes.

Structures: Additional work was required at Burnton viaduct, as a result of heavy coal traffic.

Section 6 – Customer Reasonable Requirements

This report summarises progress over the last Railtrack financial year, tracking progress for 1st April 2001 to 1st April 2002.

CRRs form an integral part of Railtrack's current CRR planning process and are reviewed regularly at Railtrack Account Management meetings with customers and PTEs.

Customers and PTEs can at any time add, amend or withdraw CRRs and they are encouraged to use the CRR process to record and track the delivery of their reasonable requirements. Railtrack maintains a planning database of all CRRs to ensure they are constantly recorded, their progress is tracked and their delivery is monitored.

During the year customers have been encouraged to include their CRRs in their Local Output Statements, to help provide an overarching document and process for recording and monitoring the delivery of future plans and actions.

Key Overall Results

There are three tables in this section which show the following:

- Breakdown of CRRs by Customer and PTEs
- List of disputed CRRs
- Enhancement Feasibility CRRs

In summary, progress of CRRs during the year shows:-

Progress of Customers Reasonable Requirements during 2001/2002.

Table 54 Summary of Customer Reasonable Requirements (CRRs)

| | |
|----------------------------------------------------------|------------|
| Live CRRs at start of year | 998 |
| Numbers submitted during the year | 70 |
| Numbers completed during the year | -177 |
| Numbers withdrawn during the year | -488 |
| Number of live CRRs at 31st March 2002 | 403 |

There has been continued effort during the year to improve the clarity and robustness of CRRs. Working closely with customers we have identified numerous CRRs that were ill defined or were no longer part of customers business plans. These have either been withdrawn or redefined and resubmitted during the year.

In a number of cases, CRRs were withdrawn on the basis that the customers' requirements were being delivered through alternative processes, such as Local Output Statements or the nationally committed scheme to fit TPWS.

Of the 177 CRRs that were classed as completed during the year, 63 were feasibility studies for enhancements schemes, 15 were implementation of enhancements, the remaining 99 related to Account Management process which the customer considered were delivered.

Successfully completed CRRs during the year included:-

- Delivery of Dartford Area Resignalling enhancements, to permit future operation of 12-car trains
- Linespeed improvements on the GE Main line out of Liverpool Street Between Harold Wood / Shenfield and Gidea Park / Shenfield
- Enhancements to SWT operated depots at Salisbury and Wimbledon Park
- Track renewals on Euston – Watford Junction 'DC' lines
- Rebuilding Chesterfield station
- Provision of customer operated lifts at Nuneaton
- Delivery of Station Regeneration Programme for West Anglia Stations
- Upgrading lifts on c2c stations at Barking, Chalkwell and Upminster
- New lifts at Motherwell
- Provisions of access at Auchinleck which is compliant with the Disability Discrimination Act, 1995 (DDA)
- Enhancement / expansion of car parking facilities at the following South West Trains operated stations: Alton, Andover, Basingstoke, Farnborough, Grately, Honiton, Milford, Salisbury, Surbiton, Winchester and Yeovil Junction
- New down side car park at Stowmarket
- Performance improvement measures including installation of sanding equipment on some Connex South Eastern Trains, to mitigate the effects of wheelslip.

Table 55 Customer Reasonable Requirements (CRRs) by customer

| Customer or Funder | Totals | | | | Breakdown of Live CRRs by category | | | |
|----------------------------|-----------------------------|-----------------------------------------|-----------------------------|--------------------------------|------------------------------------|-------------|----------------|-----------------------|
| | Number Submitted (April 01) | No. withdrawn / completed during period | No. Submitted during period | Number of live CRRs (April 02) | Account Management | Enhancement | | Agreement not reached |
| | | | | | | Feasibility | Implementation | |
| Anglia | 26 | 24 | 1 | 3 | 2 | 1 | 0 | 0 |
| Arriva Northern | 10 | 6 | 0 | 4 | 1 | 2 | 1 | 0 |
| ATOC | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| C2C | 29 | 25 | 0 | 4 | 3 | 0 | 1 | 0 |
| Central Trains | 26 | 20 | 13 | 19 | 17 | 2 | 0 | 0 |
| Centro | 13 | 10 | 0 | 3 | 2 | 1 | 0 | 0 |
| Chiltern Railway | 35 | 16 | 0 | 19 | 8 | 11 | 0 | 0 |
| Connex | 38 | 13 | 0 | 25 | 14 | 4 | 7 | 0 |
| CRC | 45 | 38 | 1 | 8 | 8 | 0 | 0 | 0 |
| DRS | 11 | 1 | 0 | 10 | 9 | 1 | 0 | 0 |
| Eurostar | 9 | 3 | 0 | 6 | 5 | 0 | 1 | 0 |
| EWS Freight | 125 | 78 | 0 | 47 | 45 | 0 | 0 | 2 |
| EWS Passenger | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| First Great Eastern | 18 | 12 | 0 | 6 | 6 | 0 | 0 | 0 |
| First Great Western | 20 | 9 | 0 | 11 | 6 | 3 | 2 | 0 |
| First North Western | 13 | 4 | 0 | 9 | 8 | 0 | 1 | 0 |
| Freightliner | 17 | 15 | 0 | 2 | 0 | 2 | 0 | 0 |
| Gatwick Express | 12 | 3 | 0 | 9 | 6 | 3 | 0 | 0 |
| GMPTe | 20 | 12 | 0 | 8 | 7 | 1 | 0 | 0 |
| GNER | 16 | 0 | 0 | 16 | 9 | 2 | 5 | 0 |
| Heathrow Express | 13 | 2 | 7 | 18 | 15 | 1 | 1 | 1 |
| Hull Trains | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| Island Line | 3 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| LUL - Bakerloo Line | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| LUL - District Line | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| Merseyrail Electrics | 3 | 0 | 0 | 3 | 2 | 0 | 1 | 0 |
| Merseytravel | 6 | 0 | 0 | 6 | 2 | 0 | 4 | 0 |
| Midland Mainline | 55 | 44 | 1 | 12 | 2 | 7 | 3 | 0 |
| NEXUS | 4 | 3 | 0 | 1 | 0 | 0 | 1 | 0 |
| ScotRail | 8 | 6 | 3 | 5 | 3 | 0 | 2 | 0 |
| Silverlink | 73 | 66 | 4 | 11 | 2 | 3 | 6 | 0 |
| South Central | 34 | 31 | 0 | 3 | 2 | 0 | 1 | 0 |
| South West Trains | 24 | 23 | 3 | 4 | 3 | 1 | 0 | 0 |
| SPTe | 16 | 13 | 7 | 10 | 1 | 1 | 8 | 0 |
| SYPTe | 4 | 3 | 0 | 1 | 0 | 1 | 0 | 0 |
| Thames Trains | 67 | 8 | 2 | 61 | 44 | 15 | 2 | 0 |
| Thameslink | 7 | 11 | 22 | 18 | 11 | 7 | 0 | 0 |
| Virgin Cross Country | 17 | 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| Virgin West Coast | 82 | 66 | 0 | 16 | 5 | 9 | 2 | 0 |
| WAGN | 46 | 36 | 4 | 14 | 10 | 4 | 0 | 0 |
| Wales & West | 22 | 23 | 2 | 1 | 1 | 0 | 0 | 0 |
| West Coast Railway | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| WYPTe | 6 | 5 | 0 | 1 | 0 | 0 | 1 | 0 |
| TOTAL | 998 | 665 | 70 | 403 | 264 | 85 | 51 | 3 |
| Percentage of total | | | | 100% | 65% | 21% | 13% | 1% |

* Note: There has been a minor restatement of the number of CRRs shown as submitted at 1st April 2001, with an increase of 4 on last years total of 994

Table 56 Disputed CRRs

| Customer | Requirement | Summary as at 1 st April 2002 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heathrow Express | Heathrow Central and Paddington Stations - Minimise all delays as a result of disruption (Ref.13807) | Service Recovery proposals have been presented to Heathrow Express as part of the implementation of the Zones Contingency Plans. The target date for completion was late September 2001 but as of yet agreement has not been reached. Discussions continue between Railtrack and the customer. |
| EWS | WCML Control Systems requirements. The requirement set out in section 8 of the original EWS requirement applies to any mandatory train control or communication system such as NRN, DART, TPWS and ATP. (Ref.2066) | Discussions continue with customer. Railtrack awaits EWS clarification of recent industry developments prior to resolution of the issue. |
| EWS | Freight Capacity Acton ML – Airport Junction. EWS requires Railtrack to provide timetable evidence to demonstrate that they have adequate plans to meet EWS requirements. The Heathrow to St.Pancras service is being developed in 3 phases. The new services, which are contracted to run for 4 years, do not inhibit provision for all known EWS growth plans. (Ref.2379) | A study into the Great Western Mainline upgrade is being undertaken. |

Table 57 Enhancement Feasibility CRRs – 1st April 2002

| Timeband | Number of CRRs to be completed/withdrawn in period | % (of total number of Enhancement Feasibility CRRs) |
|-----------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|
| By 31/3/03 | 69 | 81% |
| Beyond 31/3/03 | 16 | 19% |
| Total number of Enhancement Feasibility CRRS | 85 | 100% |

Glossary of Terms

| | |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC | Alternating current |
| AHB | Level crossing protected by automatic half-barrier |
| AMP | Asset Maintenance Plan |
| Annual Return | The report which Railtrack PLC is required to submit to the Regulator |
| ATOC | Association of Train Operating Companies |
| ATP | Advanced Train Protection |
| AWS | Automatic Warning System |
| BAA | Owner and operator of a number of airports in Great Britain and elsewhere |
| bogie | Frame containing suspension axles and wheels on which a railway vehicle is mounted |
| c2c | Commuter train operating company running services between Shoeburyness and London Fenchurch Street |
| CCTV | Closed-circuit television |
| CIS | Customer information system |
| Control Period | The period (normally five years) for which the Rail Regulator fixes our access income from franchised passenger train operators |
| Crossing | The component of a turnout that enables a train wheel to complete the transfer from one line to another. It is this unit which enables the wheel to cross the original line being traversed |
| CRR | Customer Reasonable Requirement |
| CTRL | Channel Tunnel Rail Link |
| Customers | Those who use Railtrack infrastructure and equipment |
| DARS | Dartford Area Resignalling Scheme |
| DART | Digital Advanced Radio for Trains |
| DC | Direct current |
| DRS | Direct Rail Services |
| DTLR | Department of Transport, Local Government and the Regions |
| ECML | East Coast Main Line |
| EWS | English Welsh & Scottish Railway |
| FGW | First Great Western |
| Funders | Authorities and agencies which provide funding to secure rail services |
| GCC | Gauge Corner Cracking |

| | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| GE | Great Eastern |
| GMPTE | Greater Manchester Passenger Transport Executive |
| GNER | Great North Eastern Railway |
| IECC | Integrated Electronic Control Centre |
| IMC2 | Second generation maintenance contract |
| IMC2000 | Third generation maintenance contract |
| Interlockings | Mechanical, electrical or electronic. These execute the safety logic to reduce the risk of error when controlling points and signals. |
| IOS | Incremental Output Statement |
| IT | Information Technology |
| kV | Kilovolt (= 1,000 volts) |
| LC | Level crossing |
| Level 2 Exceedence | A measure of track geometry |
| LMD | Light Maintenance Depot |
| LNE Zone | London North Eastern Zone |
| Loop | A facility to allow a train to stop and be overtaken by a faster train |
| LUL | London Underground Limited |
| Masterplan | The plans for the development of each of the major stations – those stations that are operated by Railtrack |
| NEXUS | Tyne and Wear Passenger Transport Executive |
| NMS | Network Management Statement |
| NRN | National Radio Network |
| OHL | Overhead line |
| OLE | Overhead line equipment |
| ORR | Office of the Rail Regulator |
| parkway station | A railway station with a large car park and easy road access |
| Periodic Review | The process by which the Regulator establishes Railtrack's revenue requirements for a quinquennium |
| PfPI | Process for Performance Improvement |
| Piggyback | Conveying lorry trailers by train |
| Possession | The closure of a line to allow engineering works |
| PSB | Power signal box |

| | |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| PTE | Passenger Transport Executive |
| PTI 2000 | Public Transport Information 2000 |
| PUG | Passenger Upgrade |
| PUG 1 | Passenger Upgrade No 1 – agreement with the Franchising Director and WCML |
| PUG 2 | Passenger Upgrade No 2 – agreement with Virgin Trains for the capacity and capability of WCML and revenue sharing arrangements |
| RA | Route availability – RA1–6 up to 20.3 tonnes; RA7–9 up to 23.4.t; RA10 up to 25.4t |
| RAB | Regulatory Asset Base |
| Rules of the Route | Agreement between Railtrack and train operators as to when lines can be temporarily closed for maintenance and renewal work |
| Running Lines | Lines used for running services, not sidings |
| S&C | Switches & Crossings. Component units that make up points or a turnout |
| SCMI | Structures Condition Monitoring Index |
| SICA | Signalling Infrastructure Condition Assessment |
| SPT | Signal Post Telephone |
| SPAD | Signal Passed At Danger |
| SPT | Strathclyde Passenger Transport |
| SRA | Strategic Rail Authority |
| SRP | Station Regeneration Programme |
| SWT | South West Trains |
| SYPTE | South Yorkshire Passenger Transport Executive |
| TfL | Transport for London |
| TPWS | Train Protection Warning System |
| TPWS+ | TPWS functionality at higher speed |
| Track circuit | An electrical device using the rails in an electrical circuit, which detects the presence of trains on a defined section of line |
| TSP | Track Sectioning Point |
| TSR | Temporary speed restriction |
| Tumbback | A facility allowing trains to reverse their direction |
| UK | United Kingdom |
| UPS | Uninterruptible Power Supply |

| | |
|-----------|-----------------------------------------------------------------------------------------------------|
| W10w | This gauge was previously known as 9'6" refrigerated container gauge. It is now called W12. |
| W11 | The gauge capable of handling 4m-high lorry trailers on rail wagons. This gauge is now known as W18 |
| W12 | Freight gauge formerly known as W10W |
| W18 | The gauge formerly known as W11 |
| W6A | Loading gauge for standard freight vehicles |
| W7 | Previously called WG8 8' container gauge |
| W8 | Previously 8'6" container gauge |
| W9 | Previously SB1c gauge |
| W10 | Previously 9'6" container gauge |
| WA | West Anglia |
| WAGN | West Anglia & Great Northern Railway |
| WCML | West Coast Main Line |
| WCRM | West Coast Route Modernisation |
| Wheelchex | A system to measure the forces generated by a train running on track |
| WYPTE | West Yorkshire Passenger Transport Executive |