NATIONAL AUDIT OFFICE

Report by the
Comptroller and Auditor General

Office of the Rail Regulator

Ensuring that Railtrack maintain and renew the railway network

HC 397 Session 1999-2000
12 April 2000

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John Bourn
Comptroller and Auditor General

National Audit Office
3 April 2000

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Executive summary

We examined what the Office of the Rail Regulator (the ORR) have done to ensure that Railtrack properly maintain and renew the national railway network

1 In the 1999 Queen's Speech the Government set out its commitment to creating a modern, integrated and safe transport system. The railways will form a key part of that system and are of strategic national importance. Millions of people and businesses depend on them every day. In 1998-99 passengers made nearly 900 million journeys and over 100 million tonnes of freight were carried.

Railtrack own the national railway network; train operators pay Railtrack to use it.

2 Railtrack own the national railway network of track, bridges, stations and signals on which passenger and freight train operators run trains. In 1998-99 train operators received public subsidies of £1.5 billion[1] - some 30 per cent of their total income of £5.1 billion. The train operators used their income to pay Railtrack £2.3 billion in "access charges" for using the network, which made up some 90 per cent of Railtrack's total income. The taxpayer can accordingly be considered to be the indirect source of a significant proportion of Railtrack's income (Figure 1 and paragraphs 1.4 and 1.5).

3 The Office of the Rail Regulator (ORR) regulate access to Railtrack's network and set the access charges paid by train operators. They are also responsible for enforcing the licences granted to Railtrack to operate the railway network. The ORR were established in December 1993 following the Railways Act of that year. This report covers the ORR's activities over the period since they were set up, and particularly since the flotation of Railtrack in 1996. The present Rail Regulator, Mr Tom Winsor, took up office on 5 July 1999 (paragraphs 1.7, 1.8 and 1.17).

Railtrack are responsible for maintaining and renewing the national railway network

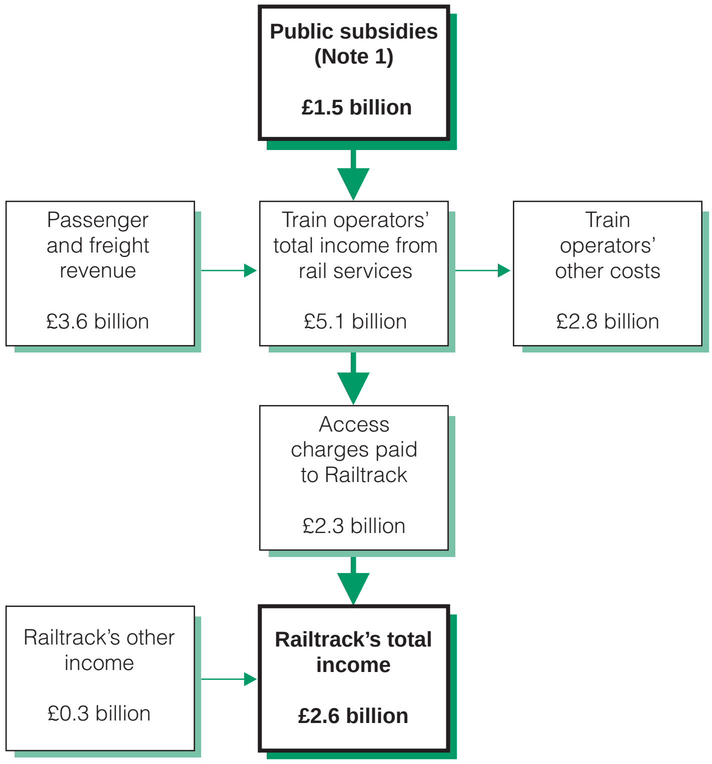
4 Maintenance and renewal account for more than half of Railtrack's spending on the network. Railtrack are responsible for maintaining and renewing the network so that train operators can provide a safe and acceptable service to the public. If they do not, there is a risk of serious delays and cancellations to trains, a poor or potentially unsafe service to rail users, and increased costs in the future to make good deterioration in the condition of the assets (paragraphs 1.18 to 1.20).

1 All monetary amounts in this report are stated at 1998-99 prices unless otherwise stated.

How public subsidies contribute to the income of the railway industry and of Railtrack

Figure 1

Through subsidies to train operators, the taxpayer can be considered to be the indirect source of a significant proportion of Railtrack's income



Notes:
1. Payments to train operators from central and local government are not earmarked specifically for onward payment to Railtrack.
2. Amounts shown relate to 1998-99. Subsidies for 1999-2000 are planned to be £1.3 billion.

Sources: Department of the Environment, Transport and the Regions; Railtrack

The Health and Safety Commission have prime responsibility for regulating railway safety.

5 Ensuring the safety of those who use or work on the railways is an overriding concern for all involved in providing and regulating rail services. Railtrack are responsible for the safety of their operations and for overseeing the safety of the operations of others who work on the railway, such as contractors and train operators. The Health and Safety Commission and their operational arm the Health and Safety Executive have prime responsibility for regulating health and safety on the railway, but the ORR have a statutory duty to take into account the need for safety and the advice of the Executive (paragraphs 1.12 to 1.14).

6 Railtrack were set up as a government owned company in 1994 and privatised in 1996. The ORR have prime responsibility for regulating Railtrack in areas other than safety. They enforce, and in certain circumstances can amend, the terms of the licence to operate the network issued to Railtrack by the Secretary of State in 1994. And they set the access charges paid by train operators, which they are currently setting for the period 2001 to 2006. In doing so, they are responsible for ensuring that Railtrack maintain and renew the network properly, and for ensuring that the regulatory regime provides appropriate incentives to ensure that Railtrack do so (paragraphs 1.4, 1.7, 1.21 to 1.29).

This report examines the ORR's work in regulating Railtrack's maintenance and renewal of the network.

7 This report examines the work of the ORR in regulating Railtrack's maintenance and renewal of the network. We carried out our examination at a time of rapid change. Passenger and freight traffic are growing strongly and Parliament is considering legislation to establish a Strategic Rail Authority to develop and promote railway use. The Government have also appointed new personnel to the ORR and the proposed Strategic Rail Authority, to take action in the face of continuing debate over the performance of the railways (paragraphs 1.15 to 1.17 and 1.32).

The network's performance has not improved sufficiently to meet the ORR's requirements

Railtrack are responsible for nearly half of passenger train delays.

8 Railtrack are responsible for an average of around 70 seconds delay per passenger train, nearly half of such delays. They are also responsible for around four minutes delay per freight train. Delays occur for many different reasons, but often they result from action to ensure safety following an equipment failure, for example when track is temporarily closed due to a signalling fault. If delays are reduced by improving the reliability of equipment, that can benefit safety, but the Health and Safety Executive have stressed to Railtrack that they must make sure that such reductions are not secured by reducing safety margins (paragraphs 2.3 to 2.6).

Train delays caused by Railtrack's maintenance and renewal problems have fallen.

9 Since 1995-96, passenger traffic has grown by 27 per cent and freight traffic by 35 per cent. During this period total delays caused by Railtrack's maintenance and renewal of the network have fallen by 26 per cent, mostly between 1995-96 and 1996-97 and in 1999-2000. Taking into account the growth in traffic, passenger delays from this cause in the year ending September 1999 were 35 per cent lower than in 1995-96 (paragraphs 2.7 and 2.8).

The ORR are seeking further improvements.

10 Since 1998-99 Railtrack have set themselves annual targets for reducing delays from all causes for which they are responsible. The ORR did not require Railtrack to set such targets until after September 1997, when they amended Railtrack's network licence. They then put pressure on Railtrack using the amended licence both to set targets and to ensure that they were sufficiently demanding. In 1998-99 Railtrack achieved a reduction for passenger trains of 2 per cent against a target of 7.5 per cent. The ORR have told Railtrack that in 1999-2000 they must make good the deficiency and reduce delays by a further 7.5 per cent – equivalent to reducing delays by 12.7 per cent on the 1998-99 level. If they do not, the ORR will fine them £4 million for every percentage point by which they fall short of this target. Railtrack have appealed to the courts about the size of this potential fine. In March 2000 Railtrack reported that they expected to achieve a reduction in 1999-2000 of 10 per cent, compared to the 12.7 per cent required by the ORR (paragraphs 2.14 to 2.18).

11 At privatisation the only commercial incentives for Railtrack to improve their performance were provided by contracts between Railtrack and train operators, approved by the ORR in 1995. These contracts provide for Railtrack to receive bonuses or penalties depending on their performance in avoiding delays. Railtrack have sought to improve their performance in response to these incentives and they received bonuses every year between 1996-97 and 1998-99 because they were responsible for less delay than in 1995-96, the baseline used for assessing bonuses. In 1998-99 the bonuses totalled £25 million and it appeared likely in March 2000 that Railtrack would also receive bonuses for 1999-2000 (paragraphs 2.21 to 2.26).

Cancellations caused by Railtrack's maintenance and renewal problems have more than halved.

12 Around a sixth of the 130,000 passenger train cancellations each year are the result of maintenance and renewal problems by Railtrack. There were some 41,500 such cancellations in 1995-96 but this number more than halved between 1995-96 and 1996-97 and totalled some 20,500 in 1998-99 (paragraph 2.10).

Railtrack report that their spending on maintenance and renewal will exceed that forecast at privatisation

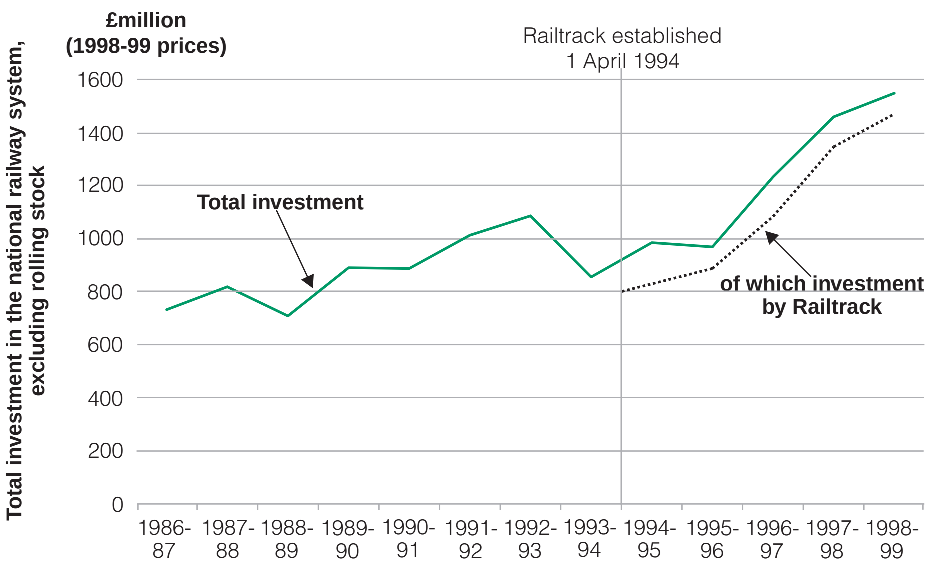
Railtrack are expected to have spent at least £10.5 billion on maintenance and renewal by 2000-01.

13 In the absence of other information on the condition of the network, the ORR have focused on Railtrack's spending on maintenance and renewal. The prospectus issued by the Department of Transport for the 1996 privatisation of Railtrack included spending projections that indicated that Railtrack would spend £10.5 billion on maintenance and renewal between 1995 and 2001 - an average of some £1.7 billion a year. The ORR were initially concerned that Railtrack were spending less than this amount. But in 1999 the ORR's consultants estimated that Railtrack would spend very close to it and in March 2000 Railtrack's latest forecast was that they would spend some £750 million more than forecast in the prospectus. Railtrack also plan to spend some £2 billion a year on maintenance and renewal up to 2005-06. In addition, spending on enhancing and renewing the network is at its highest level for many years (Figure 2) (paragraphs 3.8 and 3.12 to 3.20).

Investment in the national railway network 1986-87 to 1998-99

Figure 2

This figure shows that total investment in the railway network has increased since Railtrack were established and is at its highest level for many years



Note: Investment consists of spending on enhancement and renewal and excludes maintenance. Due to a change of accounting practice in 1994-95, investment shown for 1994-95 and later years includes around £75 million a year excluded from totals for earlier years.

Sources: Department of the Environment, Transport and the Regions; Railtrack

The ORR have limited information on the condition of Railtrack's assets

14 Railtrack's network is made up of four main types of asset: track; structures, such as bridges and tunnels; stations; and signalling equipment. The quality of information on the condition of these assets was poor when Railtrack were formed in 1994 and it remains incomplete (paragraphs 3.2 and 3.30).

Track condition has deteriorated but Railtrack have now undertaken to restore it.

15 The ORR have reasonably full information only on the condition of track. Track condition declined between 1994 and 1996, when Railtrack were privatised, the proportion of track assessed as being "satisfactory" or better falling from 90 percent in 1994 to 87 per cent in 1996. It partially recovered to 89 per cent in 1998. Some three per cent of track is currently rated as "very poor". The ORR did not act to address this problem until 1998, when they agreed that Railtrack should restore track condition to its 1994 level by April 2000 where maintenance is required, and by April 2001 where renewal is required (paragraphs 3.39 to 3.45).

16 The number of broken rails has also increased, from 750 in 1995-96 to 937 in 1998-99, a 25 per cent increase. In 1999 an increase in the number of broken rails in the Severn Tunnel prompted the Health and Safety Executive to order Railtrack to replace track in the tunnel and to restrict train speeds until they had done so. In August 1999 the ORR told Railtrack that they must reduce significantly the number of broken rails and asked for detailed information on the cause of broken rails. This step may lead to enforcement action if the ORR conclude that Railtrack are in breach of their licence to operate the network. Railtrack told us that the number of broken rails had been affected by the large increase in freight traffic in recent years and they did not believe that it indicated that they were in breach of their responsibility to maintain the network (paragraphs 3.46 and 3.47).

The ORR have had difficulties in monitoring and in setting incentives

The ORR have had difficulty in establishing whether Railtrack have carried out enough maintenance and renewal:

17 The ORR have had difficulty in establishing how far Railtrack have discharged their obligation to maintain and renew the railway network properly. There have been five main problem areas:

- the ORR have not agreed with Railtrack what work is needed;

a) When in 1995 the ORR set the access charges currently paid by train operators, there was limited understanding of what future expenditure was needed, and the ORR did not specify or agree with Railtrack what maintenance and renewal work Railtrack would carry out, or what would be achieved as a result of such work, for example in terms of the performance or condition of the network. They have been unable, therefore, to measure what Railtrack have actually done against any agreed baseline. Railtrack told us that because of this problem, and the lack of any specified output requirements from the ORR before 1998, they have found that the ORR's expectations have been unclear and unpredictable (paragraph 3.30).

- the renewal concept the ORR have expected Railtrack to apply has lacked definition and been difficult to apply;

b) The ORR set access charges in 1995 at a level intended to pay for assets to be renewed in "modern equivalent form", that is, when renewal is necessary, replacing old assets in the form of modern assets capable of doing the same job. The ORR have consistently said they have expected Railtrack to renew assets in this form but at privatisation there was a lack of performance indicators for the condition of Railtrack's network, and the ORR did not provide any clear guidance on how Railtrack should apply this concept. In 1997 the ORR amended Railtrack's licence to require them to develop investment criteria showing how they intended to apply this concept. The ORR have commented on drafts of these criteria, but, in order to see first how they work in practice, they have not finally approved them.

As a result, the ORR's requirement for renewal to be in "modern equivalent form" has lacked clarity. It has also been difficult to apply in practice. For example when new assets have been capable of doing a better job than those they have replaced there has been difficulty in determining whether the replacement constitutes renewal, which is paid for from existing access charges, or enhancement, for which Railtrack are entitled to charge extra. Such difficulties have weakened the ability of the ORR and Railtrack to judge whether since 1995 Railtrack have delivered what they should. The ORR intend to make much less use of the concept of modern equivalent form when they set access charges for the period from 2001 to 2006, and to provide a clearer framework for how expenditure on enhancing the network is to be monitored and paid for (paragraphs 3.28 and 3.29).

- the ORR have not been able to monitor the condition of Railtrack's assets;

c) Railtrack and their contractors have local records of the condition of Railtrack's assets but Railtrack do not yet have an effective method of producing a national overview of the condition of many of their assets. As a result, the ORR lack a comprehensive picture of how well such assets are being maintained. Railtrack have reservations about how much detailed national monitoring of most assets is required, and they consider that the ORR should focus primarily on Railtrack's performance, for example in terms of network capacity, train delays and ride quality. But for some types of assets, such as signalling equipment, bridges and stations, asset condition can deteriorate considerably before such performance is affected. Timely maintenance of such assets can keep them in good condition and avoid costly renewal later, and monitoring of their condition is essential both for Railtrack's management of maintenance and renewal, and for the ORR's monitoring of Railtrack's stewardship of these assets. Railtrack are therefore seeking to improve the information they provide the ORR on these matters (paragraphs 3.27 and 3.34 to 3.67).

- Railtrack have changed their approach to when to renew assets;

d) Railtrack have changed their approach to deciding when it is necessary to renew assets. They aim to focus, particularly for signalling, on small scale renewals of assets based on their condition, rather than on larger scale renewals of groups of assets according to their age. This change could benefit both customers and Railtrack if it allows the cost of the network to be permanently reduced without compromising safety or performance. The ORR are concerned, however, that Railtrack's information on the condition of their assets is not yet good enough to allow them to adopt this approach without running the risk of unexpected failures of equipment in service or a decline in the long-term health of the network (paragraphs 3.31 to 3.33 and 3.67).

- key information supplied by Railtrack is not independently verified.

e) The ORR have not required independent verification of all key monitoring information provided to them by Railtrack, although some information is independently verified. Independent verification is important to ensure that the data used by the ORR for their monitoring is soundly based and can be relied upon. Only then can the users and funders of the railway have full confidence in Railtrack's stewardship of the network (paragraphs 3.10 and 3.11).

Recommendations

18 Since privatisation the ORR have made improvements each year to their regulation of Railtrack's stewardship of the national railway network. For example, they have secured significant improvements in the information they require Railtrack to publish on their plans for maintaining and renewing the network, in clarifying Railtrack's responsibilities for carrying out this work, and in specifying targets for improved performance by Railtrack. In doing so, they have strengthened significantly the regulatory regime established by the licence granted to Railtrack in 1994. But much still needs to be done to provide a fully effective regime for the future (Appendix 4 and paragraphs 2.14 to 2.17).

19 The ORR recognise the need for change and are seeking to address it in their current review of Railtrack's access charges for the period 2001 to 2006 and by plans to amend Railtrack's network licence (paragraph 3.34). In doing so, we recommend that the ORR need to ensure that they successfully address the following issues:

Greater clarity on what Railtrack should deliver.

1. **The ORR should set out more clearly than before what they expect Railtrack to deliver as the result of maintenance and renewal.** The ORR plan to make a final decision in July 2000 on the level of access charges for the period from 2001 to 2006. They have announced that they intend to set out with greater precision what Railtrack will be expected to deliver over this period in terms, for example, of the performance of the network in supporting train services, and the condition of key network assets. The ORR need to ensure that, in doing so, they provide greater clarity than in the past as to how they will assess what Railtrack have delivered in terms of maintenance and renewal to discharge their obligation as an efficient and effective steward of the network.

Improved monitoring of asset condition.

2. **The ORR should secure a better picture of the condition of the network's assets.** Passengers, freight users and the taxpayer are paying for Railtrack to spend some £1.7 billion a year on maintaining and renewing the network. The ORR need to remove the deficiencies in their information on the condition of Railtrack's assets so that they can assess satisfactorily on customers' behalf what is being achieved with this money. Comprehensive information on the condition of assets is also necessary if Railtrack are successfully to base the timing of future renewals on the condition of their assets, rather than on their age, and if the ORR are to assess accurately how much Railtrack need to spend on maintenance and renewal in the future. This is particularly so for assets whose condition may deteriorate considerably without immediately affecting those aspects of Railtrack's performance, such as train delays, already monitored by the ORR. The ORR announced in November 1999 plans to amend Railtrack's licence to improve the information on these matters provided to them by Railtrack. In doing so, the ORR need to agree with Railtrack a timetable to remove the information deficiencies and to monitor Railtrack's progress in meeting this timetable.

Independent verification of monitoring information.

3. **The key elements of the monitoring information that the ORR receive from Railtrack should be independently verified to ensure that it is robust and commands public confidence.** The ORR also announced in November 1999 plans to adopt the approach used in the water industry, where the water companies are required to employ independent "reporters", approved by the water regulator, to verify and give their professional opinion on the information supplied by the companies to the regulator.

Improved monitoring of network performance.

4. **The ORR should continue to develop appropriate targets and clearly predictable incentives for Railtrack to improve their performance on punctuality, cancellations and track condition.** In their review of access charges, the ORR are reviewing the incentives for Railtrack to improve their performance. In doing so, they need to ensure that they consider whether the rewards and penalties to improve Railtrack's performance on delays, provided for in Railtrack's contracts with train operators, need to be strengthened and brought into line with the system of performance improvement targets and penalties that the ORR have more recently developed and enforced under Railtrack's network licence.

Part 1: The ORR are responsible for regulating Railtrack in areas other than safety

The national railways are a key part of the country's transport system.

1.1 In 1998-99 passengers made some 893 million journeys on the national railways[2] and some 102 million tonnes of freight were carried on it. The national railway network on which trains run - including a wide range of equipment and structures (Figure 3) - is owned and operated by Railtrack plc.[3]

The performance of the railways since privatisation has been the subject of continuing public debate and concern.

1.2 The Government's rail summit in February 1999 emphasised to the rail industry and the public the high importance the Government place on increasing the quality of railway services. Effective and timely maintenance and renewal of the railway network are crucially important in achieving this aim. In 1998-99 Railtrack were responsible for about 45 per cent of passenger train delays and 13 per cent of freight train delays. Some 70 per cent of the delays for which Railtrack were responsible were caused by maintenance and renewal problems.

This report examines how far the ORR are meeting their responsibility to ensure that Railtrack maintain and renew the national railway network effectively.

1.3 We examined the ORR's performance in ensuring that Railtrack properly maintain and renew the railway network. This part of the report provides background information, covering:

- **i)** the structure of the railway industry after privatisation;
- **ii)** the bodies responsible for regulating safety on the railways;
- **iii)** the Government's plans for regulating the railways;
- **iv)** Railtrack's responsibilities for maintaining and renewing the railway network;
- **v)** the objectives and powers of the ORR;
- **vi)** the scope of our examination and the issues we addressed.

2 For the purposes of this report, the national railways are defined as the system formerly run by British Rail and exclude the London Underground, Northern Ireland Railways, the Docklands Light Railway and other publicly and privately owned railways.

3 Railtrack own and operate the 14 major stations. They also own the remaining stations, numbering nearly 2,500, which are operated by train operating companies.

Figure 3

Railtrack plc own and operate the national network of 20,000 miles of railway track, 40,000 bridges and tunnels and 2,500 stations

This figure shows the key assets making up Railtrack's network

20,000 miles of track and signalling

40,000 bridges, tunnels and viaducts

9,000 level crossings

2,500 stations

88 depots

Sources: Railtrack; Rail Images

The railway industry was restructured prior to privatisation

In the mid-1990s British Rail was split into three main elements:

1.4 Before the railway industry was privatised during the mid-1990s, British Rail owned and operated the whole national railway network in Great Britain. The Railways Act 1993 enabled the splitting of British Rail into three main elements, paving the way for subsequent privatisation:[4]

Railtrack, who are responsible for the network;

- Railtrack, who own the track, supporting structures, signalling systems, stations and other assets that make up the railway network. Railtrack were set up as a government owned company in 1994 and privatised in 1996.

train operators;

- Train operators, who run passenger and freight trains on Railtrack's network. The train services formerly run by British Rail now consist of 25 domestic franchises run by passenger train operators, an international passenger train operator and three freight train operators. The franchised train operators were privatised between 1995 and 1997. Most of the passenger train operators receive public subsidies, either from the Government's Shadow Strategic Rail Authority (SSRA) (formerly the Office of Passenger Rail Franchising - OPRAF) or from local Passenger Transport Executives. In 1999-2000, two operators paid the Shadow Strategic Rail Authority for the right to run services and three are expected to do so in 2000-01.

and maintenance and leasing companies.

- A range of other companies, who provide services to support Railtrack and the train operators, such as maintaining Railtrack's railway network and leasing trains to train operators. These companies were privatised in 1995 and 1996.

Figure 4 shows the new industry structure established following restructuring and privatisation.

The train operators pay "access charges" to Railtrack for their use of the network.

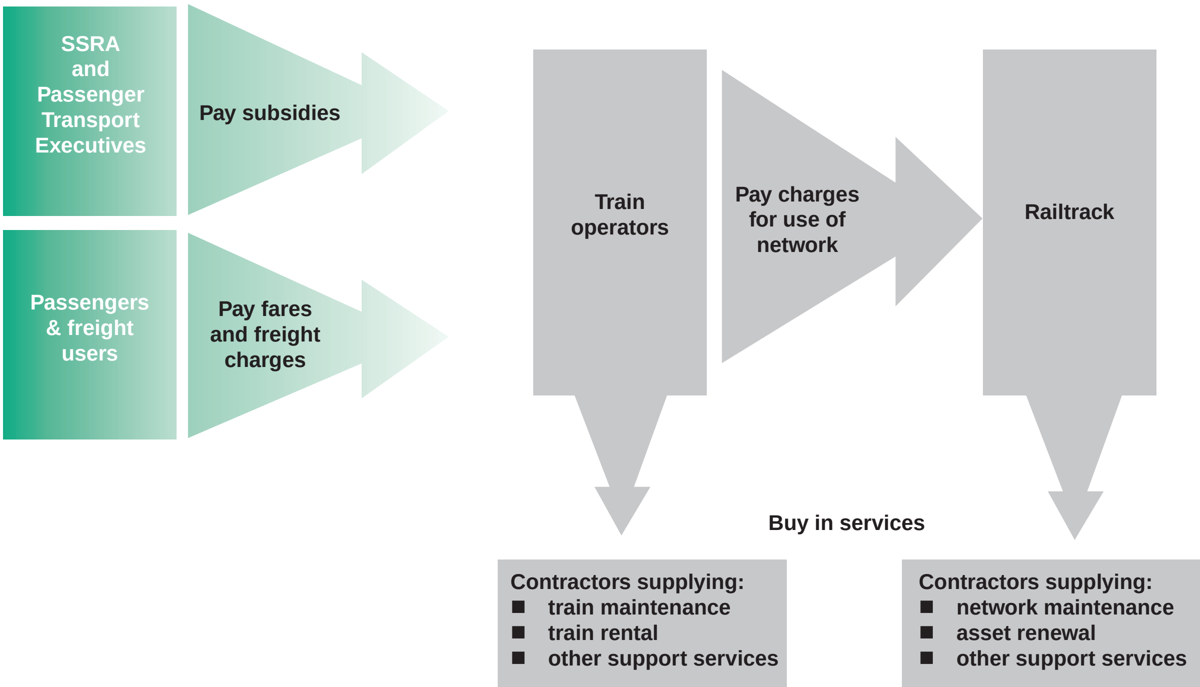
1.5 Railtrack charge the train operators for their use of the network. In 1998-99 these "access charges" totalled £2.3 billion and represented some 90 per cent of Railtrack's income. In the same year, the train operators received public subsidies totalling £1.5 billion – a net £1.2 billion from the Shadow Strategic Rail Authority's predecessor, OPRAF, and £0.3 billion from Passenger Transport Executives. The taxpayer can accordingly be considered to be the indirect source of a significant proportion of Railtrack's income.

4 Appendix 2 shows a timetable of key events in the railway industry since 1992.

Figure 4

The structure of the railway industry since privatisation

This figure shows how the railway industry has been structured since privatisation.



Source: National Audit Office analysis

Two new supervisory bodies were established:

1.6 The Railways Act 1993 established two new bodies to supervise and administer the new structure it had brought into being:

- the **Rail Regulator**, who heads the ORR;
- the **Franchising Director**, who is Chief Executive of the SSRA, and who headed their predecessor, OPRAF.

the ORR, who regulate Railtrack:

1.7 The ORR regulate access to Railtrack's network and set the access charges paid by train operators for its use. They are also responsible for enforcing the licences granted under the Act to Railtrack to operate the railway network. Railtrack hold two such licences: a licence to operate the network, excluding stations (their network licence), and a licence to operate the 14 major stations (all other stations are operated by train operators).

1.8 The ORR were established in December 1993 following the Railways Act of that year. This report covers the ORR's activities over the period since they were set up, and particularly since the flotation of Railtrack in 1996. The present Rail Regulator, Mr Tom Winsor, took up office on 5 July 1999.

1.9 The Rail Regulator is an independent office holder appointed by the Secretary of State for the Environment, Transport and the Regions. He is not currently subject to instructions from the Secretary of State but shares with him statutory general duties under the Act. The Government's aims and objectives for the railway industry are therefore important considerations for the ORR to address in carrying out their duties. In November 1997 the ORR and the Secretary of State signed a concordat recognising their respective aims and objectives and providing a framework for co-operation with each other and with the Franchising Director.

1.10 The ORR are a non-ministerial Government department. In 1999-2000 they plan to spend £9.3 million, to be recovered through licence fees paid by Railtrack (£4.2 million) and the other railway companies (£5.1 million). The ORR employ over 160 staff, including 46 staff who work for the statutory Rail Users' Consultative Committees. As at January 2000, 24 staff worked in the group primarily responsible for the regulation of Railtrack and an extra ten staff were to be recruited; many other staff provide advice and support on Railtrack issues.[5]

and the Franchising Director, who awards franchises to passenger train operators.

1.11 The Franchising Director awards franchises to private sector bidders for the 25 passenger train operators. The franchises include requirements for the train services to be provided and the regulation of some fares. They also provide for the Franchising Director to pay subsidies to the franchisees or to receive payments from them.

The Health and Safety Commission have prime responsibility for regulating safety on the railways

1.12 It is essential that the railway system is designed and operated safely, to protect passengers, those who work on the railway and the public at large. Under the Health and Safety at Work etc Act 1974 and regulations made under the Act, the railway companies themselves are responsible for ensuring that the railway is safe, reflecting the long standing principle in safety legislation that those in charge

5 The organisational structure of the ORR is shown in Appendix 3.

of an activity should be held responsible for carrying it out safely. This legislation and the Railways Act 1993 also create the following regime for regulating railway safety:

- Primary responsibility for regulating railway safety rests with the Health and Safety Commission and their operational arm the Health and Safety Executive.

- Railtrack and other companies in charge of railway assets, train and station operators and some maintenance contractors, must produce a "Railway Safety Case" setting out how they will maintain safety.

- Companies may not operate unless their safety case has been accepted as being satisfactory by the appropriate authority: the Health and Safety Executive in the case of Railtrack, and Railtrack in the case of other companies. Failure to comply with a safety case is normally an offence, and a company's licence can be revoked if it has seriously breached safety regulations.

- Railtrack's network licence requires them to operate an independent safety and standards directorate to maintain a set of common safety standards for the industry. Railtrack's safety case also requires them to oversee the safety cases of other companies.

- All companies working on the railway are required by their licences to comply with the common safety standards.

1.13 Enforcement of the safety regime is primarily a matter for the Health and Safety Executive but the ORR can be involved because they are responsible for enforcing the companies' compliance with their licences. Safety may also be an issue in other ways, for example when assessing the level at which to set Railtrack's access charges, and is a potential issue in most of the ORR's work. The ORR have a statutory duty, therefore, to take into account the need for safety, in particular by taking into account any relevant advice from the Executive. The ORR and the Executive have also agreed to consult each other on all matters affecting the other, and they work closely together, for example in seeking to ensure that Railtrack keep their track in a satisfactory condition.

1.14 The railway safety regime is currently under review. The Health and Safety Commission asked Lord Cullen to examine the appropriateness of the regime when they appointed him to lead the public inquiry into the tragic accident at Ladbroke Grove on 5 October 1999. The Government also announced in February 2000 interim measures to transfer some of Railtrack's safety responsibilities to the Health and Safety Executive. The Government have said that they will consider further action in the light of Lord Cullen's report.

The Government are making a number of changes in the regulation of the railways

A Strategic Rail Authority is being established.

1.15 The White Paper, *"A New Deal for Transport"*[6], announced the Government's intention to establish a Strategic Rail Authority to provide a clear, coherent and strategic programme for the development of the railways. The Government intend that the Authority should replace OPRAF, take over the responsibilities of the Franchising Director and assume a number of new functions, including strategic planning, identifying priorities for developing the railway, and promoting the use of the railway within an integrated transport policy. The Authority would also take on the functions of the ORR for consumer protection and representation.

1.16 These proposals are being taken forward by the Transport Bill, which received its First Reading in December 1999. The Bill proposes to give the ORR new duties and powers, including:

- a duty to have regard to statutory guidance from the Secretary of State on the Government's broad policy objectives for the railway;
- a duty to help the Strategic Rail Authority to further their strategies and to contribute to integrated transport and sustainable development;
- a power to direct owners of rail facilities to improve them or provide new facilities (this power would be exercisable only on the request of the Authority);
- stronger powers to enforce companies' obligations under the Railways Act 1993.

6 Cm 3950, published in July 1998.

The ORR's responsibilities for regulating Railtrack's maintenance and renewal of the railway network would remain largely unchanged.

1.17 Pending the passage of the Bill, the Government have set up a Shadow Strategic Rail Authority, combining the existing powers of OPRAF and the British Railways Board. These institutional changes have been accompanied by changes in key personnel. In February 1999 the Deputy Prime Minister appointed Sir Alistair Morton as Chairman of the British Railways Board and Chairman-designate of the Strategic Rail Authority. In March 1999 he appointed Mr Michael Grant to be Franchising Director and Chief Executive-designate of the Authority and Mr Tom Winsor to be Rail Regulator. Mr Winsor took up post on 5 July 1999 and is the third holder of that post since the ORR's establishment in 1993.

Railtrack are responsible for maintaining and renewing the network

1.18 The train operators rely on Railtrack's network to provide services to their customers. The equipment and structures that make up the network need to be regularly maintained if they are to operate effectively and safely. They also need to be renewed as they wear out from use or exposure to the weather. Inadequate maintenance and renewal can lead to delays, cancellations, speed restrictions and discomfort for customers, and might jeopardise safety. Stations may also become dilapidated and unattractive. Railtrack therefore have a key responsibility for maintenance and renewal, both to support current services and to protect the long-term condition of the network.

Railtrack's responsibility for maintenance and renewal derives from their licence and from their contracts with the train operators.

1.19 Railtrack's **licence** to operate the network requires them to publish annually a statement of their plans for managing and developing the network. Since September 1997 the licence has also included a general duty to maintain, renew and develop the network (Figure 5). Railtrack's **contracts** with train operators require Railtrack to ensure that the network is maintained and operated so that each train operator can provide the train services specified in their contract. The contracts provide incentives for Railtrack to meet these contractual obligations, by providing for payments to or from Railtrack depending on their performance in avoiding train delays.

Railtrack's licence obligation for maintenance and renewal

Figure 5

This figure shows Railtrack's obligation to maintain and renew the network.

Since September 1997 Railtrack's licence has given them a duty to secure "to the greatest extent reasonably practicable having regard to all relevant circumstances, including Railtrack's ability to finance their licensed activities ...":

a) the maintenance of the network;

b) the renewal and replacement of the network;

c) the improvement, enhancement and development of the network;

in each case in accordance with best practice and in a timely, economic and efficient manner so as to satisfy the reasonable requirements of train operators and funders.

Source: Railtrack's Network licence

Railtrack spent £1.9 billion in 1998-99 on maintaining and renewing the network.

1.20 Maintenance and renewal work – amounting to £1.9 billion in 1998-99 – accounts for 60 per cent of Railtrack's total expenditure on the network (Figure 6).

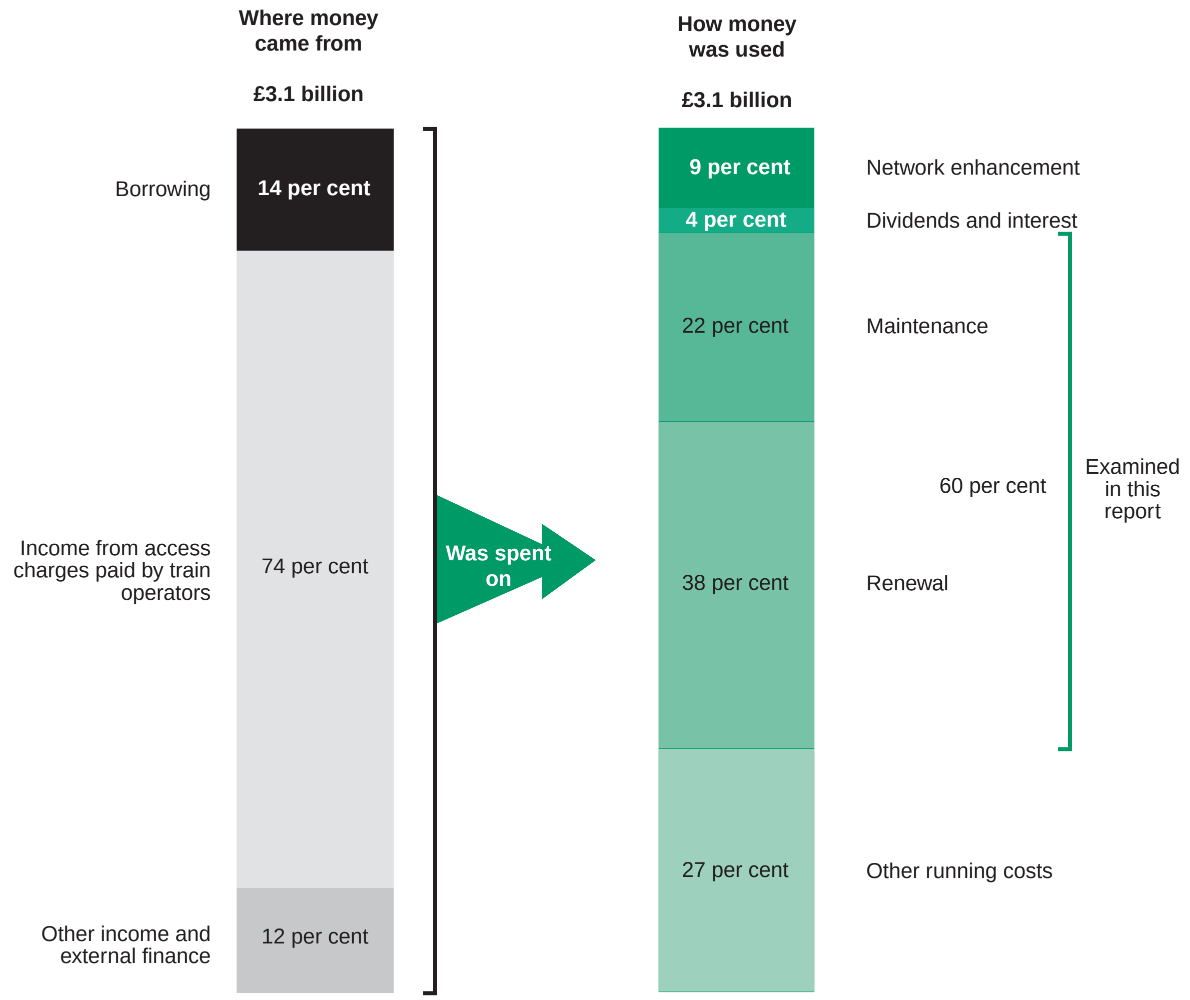
The ORR have objectives and powers to ensure that Railtrack maintain and renew the network

1.21 Like other regulated utilities, Railtrack are regulated because they have a monopoly and it is in the public interest that this monopoly is not abused. The public interest is underlined by the large amounts of public money that support the services run on the network. The purpose of regulating Railtrack is therefore to provide the pressure to serve customers well and efficiently that a competitive market would otherwise provide. The ORR's task is to use their powers to seek to:

- provide incentives for Railtrack to act efficiently and effectively and in the public interest;
- monitor Railtrack's performance in providing a satisfactory service and discharging their public service obligations;
- take appropriate action if Railtrack's performance falls short of the required standard.

Figure 6 **The funding and costs of Railtrack's network: 1998-99**

In 1998-99, maintenance and renewal represented more than half of Railtrack's expenditure on the network



Source: National Audit Office analysis

The ORR's objective is to ensure that Railtrack act as a responsible and efficent steward of the national rail network.

1.22 In line with their statutory objectives, the ORR's practical aim is to create a better railway for passengers and freight customers, and better value for public sector funding bodies, through effective regulation in the public interest. Their specific objective in regulating Railtrack is to ensure that Railtrack act *"as a responsible and efficient steward of the national rail network by operating, maintaining, renewing and developing the network to provide the improvements expected by passengers, freight users and funders"*.

1.23 In pursuit of these aims the ORR have powers under the Railways Act 1993 to:

- obtain and publish information;
- approve Railtrack's access agreements with train operators, and set the charges payable by operators to Railtrack under these agreements;
- enforce and modify Railtrack's licences.

Railtrack have some rights of appeal, under the Act and under general administrative law, against the ORR's decisions.

The ORR have powers to require Railtrack to provide information ...

1.24 Railtrack's network licence requires them to provide the ORR with such information as they may reasonably require for carrying out their functions under the Act. The ORR can also prescribe the form and period of the annual statement that Railtrack are required to make about their plans for maintaining, renewing and developing the network (paragraph 1.19 above).

... to approve access charges and contracts

1.25 Although the ORR set the level of access charges payable by operators to Railtrack for their use of the network, they cannot direct how Railtrack should spend the money. Nonetheless, they can make it clear what they expect Railtrack to achieve from the charges they have set, and can take account of their actual achievement when next they set the charges.

1.26 In 1995 the ORR set the charges currently payable by train operators for the six years from 1995 to 2001; and they are currently reviewing the level of access charges for the five-year period beginning in April 2001. They published draft final conclusions in December 1999, and they intend to set out final conclusions by July 2000.

... and to enforce and modify Railtrack's licence.

1.27 To secure Railtrack's compliance with their licences the ORR can make "enforcement orders" to fine Railtrack or require them to take action to become compliant. If Railtrack do not comply with the order, the ORR can take civil court proceedings to secure compliance, for example by seeking an injunction. In addition, anyone affected by the non-compliance can sue Railtrack for damages. From March 2000 the ORR have also been able to take action under the Competition Act 1998 if Railtrack abuse their dominant position as a monopoly. They are able to fine them up to 10 per cent of their turnover.[7]

7 For example, a maximum fine of £260 million, based on their current turnover of £2.6 billion a year.

1.28 In November 1999 the ORR made an enforcement order to secure Railtrack's compliance with their licence obligations. The order required Railtrack to reduce the delays they cause to trains in the year to 31 March 2000 by 12.7 per cent compared with the preceding year. It would also impose on Railtrack a penalty of £4 million for each percentage point by which Railtrack fall short of this target. The ORR also announced in November 1999 proposals to make an order requiring action by Railtrack with regard to their plans to improve the West Coast Main Line.

1.29 Subject to public consultation, the ORR also have the power under the 1993 Act to modify Railtrack's licences with their consent. If Railtrack do not consent, the ORR can refer the matter to the Competition Commission, and can modify a licence without Railtrack's consent if the Commission conclude that amendment would be in the public interest.

Railtrack have some rights of appeal against the ORR's decisions.

1.30 Railtrack, or any other interested party, can appeal for a judicial review of the ORR's decisions, on grounds of unreasonableness, misdirection in law or failure by the ORR to take relevant factors into account. Railtrack may also apply to the Court to quash all or part of an enforcement order, or to reduce any monetary penalty that it contains, if they believe that the ORR have acted outside their powers or failed to comply with the statutory procedures for making orders. Railtrack have made such an application with regard to the size of the potential penalty under the ORR's November 1999 enforcement order (paragraph 1.28).

1.31 Railtrack may also withhold consent to licence amendments proposed by the ORR, thereby forcing the ORR to refer the matter to the Competition Commission if they are to proceed. Unlike other regulated utilities, however, Railtrack cannot at present appeal to the Commission against decisions by the ORR about the level of their charges. This is because the level of charges is controlled by the access agreements between Railtrack and the train operators, rather than through companies' licences, as is the case in the other regulated utilities. The ORR have said, however, that they would welcome Railtrack being given the right to appeal to the Commission and are discussing with the Department of the Environment, Transport and the Regions the scope to do so within the Transport Bill.

We examined what steps the ORR have taken to ensure that Railtrack maintain and renew the network effectively

We focused on the adequacy and results of the ORR's monitoring of Railtrack.

1.32 We examined the ORR's monitoring of Railtrack as regards:

- the performance of the railway network in serving passengers, train operators and freight users (Part 2);
- Railtrack's spending on maintenance and renewal[8], what this money has purchased and the condition of the network (Part 3).

The focus of our examination throughout was on how well the ORR have done their job in regulating Railtrack. Since we do not have rights of access to Railtrack's own books and records, we were not in a position to examine at first hand what Railtrack have achieved.[9] We were, however, able to draw on extensive information obtained by the ORR or their consultants, or provided by Railtrack.

1.33 Our study methods are described in Appendix 1. In brief we:

- evaluated information on the ORR's monitoring of Railtrack's plans, outturn and performance;[10]
- interviewed representatives of relevant Government departments, Railtrack and other key parties in the railway industry;
- appointed specialist engineering and economics consultants, Charles Haswell and Partners and Europe Economics, to advise us on the technical issues, incentives and regulation;
- met the ORR's consultants Booz-Allen and Hamilton and examined their 1999 report on Railtrack's performance;

8 We focused our examination on maintenance and renewal because of the amount spent on it and its importance as a factor affecting the performance of the network, for example with regard to delays.

9 In their 53rd Report of Session 1997-98, the Committee of Public Accounts said that the National Audit Office should have direct access to Railtrack's performance monitoring systems for their audit of bonuses and penalties which pass between the SSRA and passenger train operators according to the operators' performance.

10 Appendix 4 explains how the ORR's monitoring of Railtrack has evolved since Railtrack were established in 1994.

- carried out a comparative analysis of how other regulators have regulated maintenance and renewal in the utility industries.

1.34 Our examination built on a number of earlier National Audit Office examinations of the railway industry (Figure 7).

Figure 7

National Audit Office examinations of the railway industry

We have published the following reports on the railway industry:

- **The Sale of Railfreight Distribution** (HC 280 of Session 1998-89)
- **The Flotation of Railtrack** (HC 25 of Session 1998-99)
- **Privatisation of the Rolling Stock Leasing Companies** (HC 576 of Session 1997-98)
- **The Award of the first Three Passenger Rail Franchises** (HC 701 of Session 1995-96)
- **British Rail Maintenance Limited: Sale of Maintenance Depots** (HC 583 of Session 1995-96)

Our report on **OPRAF's 1996-97 Appropriation Account** (HC 251-V) examined the information on passenger services used by the Franchising Director to administer franchise agreements. We are also currently examining the action taken by OPRAF and the SSRA to improve the performance of passenger services, and the challenges facing the SSRA in the future.

Part 2: The ORR are seeking to ensure that Railtrack improve the performance of the network

We examined the ORR's monitoring of the performance of the railway network in serving passengers, train operators and freight users.

2.1 This part of the report assesses how well the ORR have performed against their objectives by examining the performance of the network in response to their regulation. We focused on the three key aspects used by the ORR to monitor Railtrack's performance in enabling train operators to run efficient services:

- the number and length of delays to trains;
- the number of trains cancelled;
- the number of temporary restrictions on the speed of trains.

2.2 We found that:

- with growth in passenger and freight traffic since privatisation, the effect of Railtrack's maintenance and renewal on the performance of the network in serving passengers, train operators and freight users has been variable but has improved in important aspects:
    - delays changed little in 1997-98 and 1998-99 after a large initial reduction in 1996-97, but Railtrack expect a further substantial reduction in 1999-2000;
    - cancellations have more than halved;
    - the number of restrictions on the speed of trains has reduced;
- since 1998 the ORR have sought actively to achieve improvements, and have secured some results;

- Railtrack have obtained substantial benefits from performance bonuses in their contracts with the train operators, which were approved by the ORR in 1995, at the same time as the ORR have been imposing penalties on Railtrack under their network licence for failure to meet performance improvement targets.

Despite growth in rail traffic since privatisation, the network's performance has improved, but by less than the ORR have more recently required

Railtrack have continued to reduce their delays to trains

Railtrack operate a system for recording delays to trains ...

2.3 Since 1995 Railtrack have operated a system of monitoring delays to trains. The system is the source of data for the calculation of bonuses and penalties under the contracts which the ORR have approved between Railtrack and train operators (paragraph 2.22). It records the length of each delay to a train during its journey, the numbers of trains affected, the cause and the company responsible. On most routes only delays of three minutes or more are recorded. The ORR have required Railtrack to produce analyses of delays of three minutes or more, in a format specified by them, which they use to monitor Railtrack's performance.

... which has been independently verified

2.4 Railtrack's system for recording train delays and cancellations has been reviewed independently by PriceWaterhouseCoopers. Although Railtrack commissioned the review, they consulted the Franchising Director about the work to be done so that he could ensure that it met his requirements and provided the independent verification that the Committee of Public Accounts had recommended.[11] The Franchising Director in turn consulted the ORR about the review.

but does not fully meet the ORR's requirements.

2.5 The PriceWaterhouseCoopers review has raised concerns, however, about the reliability of the attribution of delays between Railtrack and train operators, and some train operators have complained to the ORR that the attribution of delays is not always accurate. The ORR are currently consulting, therefore, on whether, and if so how, the system of delay monitoring and attribution should be improved, for example by introducing a requirement for regular and independent verification of delay attribution.

11 53rd Report, 1997-98. The Committee examined the arrangements under which the Franchising Director makes payments to passenger train operators depending on the reliability and punctuality of their trains.

Railtrack are responsible for around a third of total delays to passenger and freight trains.

2.6 The ORR's monitoring of delays shows that in 1998-99 Railtrack were responsible for 46 per cent of passenger train delays (around 70 seconds per train) and 13 per cent of freight train delays (around 4 minutes per train). Railtrack were responsible for some 8.6 million minutes delay to passenger and freight trains - around a third of the total. Train operators were responsible for the remainder of delays, either to themselves or other operators[12]. Maintenance and renewal problems accounted for around 70 per cent of Railtrack's delays. The importance of maintenance and renewal is illustrated by the fact that equipment failures represented four of the six most common causes of delay for which Railtrack were responsible (Figure 8).

Figure 8

The top six causes of delay for which Railtrack were responsible, 1998-99

In 1998-99 equipment failures represented four of the six most common causes of delay for which Railtrack were responsible

Cause of delay	Maintenance and renewal related causes	Percentage of Railtrack delays attributable to cause
Track circuit failures	Yes	11
Signalling and other management causes	No	10
Points failures	Yes	10
Train planning and related causes	No	8
Temporary speed restrictions due to track condition	Yes	7
Broken rails / track faults	Yes	6

Source: Railtrack

Passenger and freight rail traffic has grown since privatisation.

2.7 Between 1995-96 and the year ending December 1999, passenger traffic on the network increased by 27 per cent, and is now at its highest level since the 1950s.[13] Over the same period freight traffic also increased by 35 per cent.[13]

Railtrack have continued to reduce train delays after a large initial reduction in 1996-97.

2.8 Figure 9 shows the total time lost between 1995-96 and 1998-99 due to delays attributed to maintenance and renewal causes for which Railtrack were responsible. It shows that, despite the growth in rail traffic, such delays fell by nearly 30 per cent between 1995-96 and 1996-97. They then increased in 1997-98 but fell again in 1998-99, and have remained below 1995-96 levels. Delays attributed to maintenance and renewal causes fell further in the first half of 1999-2000, so that in the year ending September 1999, they were 26 per cent

12 A high proportion of delays to freight trains arises at terminals and hence, in general, does not impact on the performance of other trains on the network.

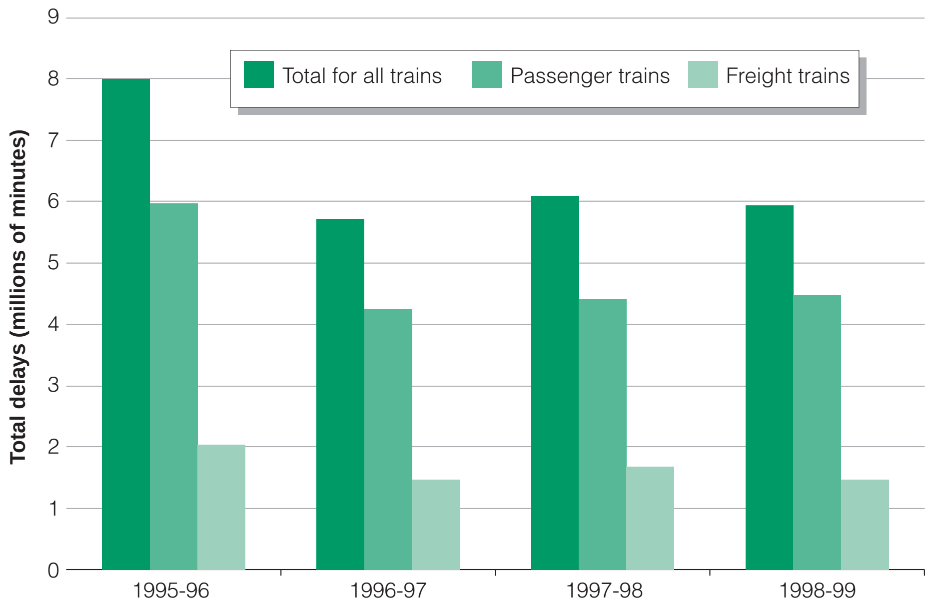
13 Traffic measured in terms of passenger and tonne kilometres.

below the 1995-96 level. Taking into account the growth of traffic, maintenance and renewal caused delays for passenger trains in the year ending September 1999 were 35 per cent lower than in 1995-96.

Time lost due to delays to passenger and freight trains attributed to maintenance and renewal causes for which Railtrack were responsible - 1995-96 to 1998-99

Figure 9

The time lost as a result of delays attributed to maintenance and renewal causes for which Railtrack were responsible fell between 1995-96 and 1996-97 and has remained below 1995-96 levels, despite growth in rail traffic



Sources: National Audit Office analysis; Railtrack

2.9 Since 1998, Railtrack have moved to a different format for reporting delays. It uses the same base data as the information provided to the ORR, but differs by focusing on the average delay per train movement, rather than the total amount of delay, in order to take into account the increase in rail traffic, which can have a strong influence on delays. Information on train delays in the new format is not yet available for the whole of the period since 1995-96. The ORR have accepted, however, that in 1998-99 and later years the new format provides an appropriate basis for setting targets for reducing train delays and for monitoring performance against them.

Cancellations have more than halved

Railtrack are responsible for around one in six train cancellations.

2.10 In 1998-99 some 130,000 trains were cancelled and failed to complete all or part of their journey - some two per cent of all trains. Maintenance and renewal problems for which Railtrack are responsible cause around one in six of these cancellations. The number of passenger trains cancelled as a result of such problems fell from over 41,500 in 1995-96 to 18,300 in both 1996-97 and 1997-98, but then increased to 20,500 in 1998-99. Freight train cancellations due to Railtrack maintenance and renewal problems show a similar pattern, falling from 5,100 in 1995-96 to 670 in 1996-97 but then rising to 1,400 in 1998-99.

The ORR have not set Railtrack targets for reducing cancellations.

2.11 In view of the comparatively small proportion of cancellations caused by Railtrack, the ORR have not sought to agree with Railtrack any targets for reducing the number of trains cancelled. This is because the ORR consider that setting targets for Railtrack to reduce the amount of delay Railtrack cause is a better way of getting them to improve their performance. The ORR told us that they would seek to set such targets, however, if the number of cancellations appeared to be out of control.

The number of temporary restrictions on the speed of trains imposed because of the condition of track or structures has gone down

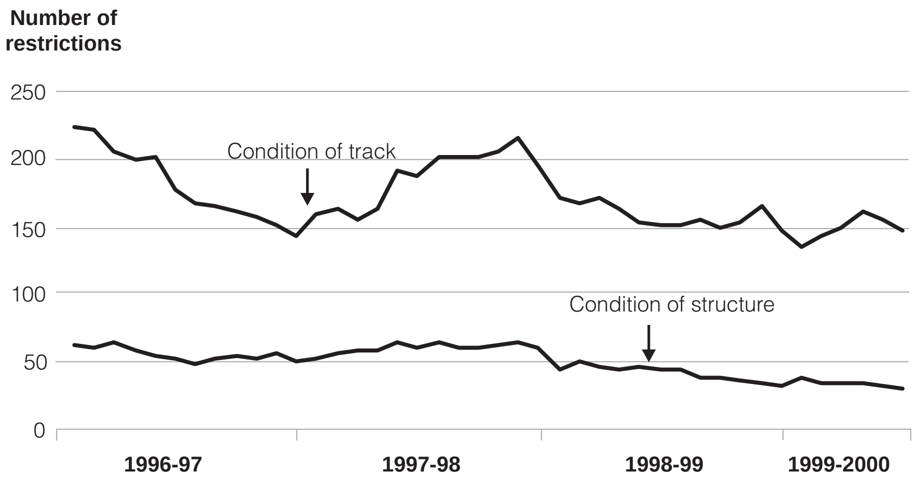
The number of temporary speed restrictions has fallen from 286 in April 1996 to 174 in March 2000.

2.12 A significant cause of delays is the imposition by Railtrack of temporary restrictions on the speed of trains because a particular section of track, or a structure such as a bridge or tunnel, has deteriorated to a state where trains cannot use it safely at the speed for which it was designed. Between April 1996 and March 1999 the number of such speed restrictions fell by over one-third, from 286 to 179 (Figure 10). In March 2000, Railtrack estimated that the number had fallen to 174. These reductions followed action by Railtrack to target renewal work on areas, such as speed restrictions, that have the greatest impact in reducing delays in order to earn bonuses from the performance regime (see paragraphs 2.21 to 2.27 below), which is intended to reward Railtrack for reducing delays. In their March 2000 Network Management Statement Railtrack forecast that the number of temporary speed restrictions in place for more than three months would be 147 at the end of 1999-2000 and that it would fall to 80 by 2010-11.

Figure 10

The number of temporary speed restrictions in place has fallen since April 1996

Temporary restrictions on the speed of trains due to the condition of the track or structures - April 1996 to September 1999



Sources: National Audit Office analysis; Railtrack

2.13 The ORR have not sought targets for reducing the number of temporary speed restrictions because they do not want to discourage Railtrack from imposing restrictions where these are required for safety reasons. The ORR monitor both the number of temporary speed restrictions in place and the number in place for more than three months to assess the condition of track and structures and Railtrack's promptness in carrying out any necessary repairs. They are also seeking Railtrack's agreement to report from 2000 the age of restrictions, the length of track affected and the severity of restrictions, that is, the amount by which train speeds are being reduced.

Since 1997 the ORR have sought actively to achieve improvements in the performance of the network

The ORR have asked for undertakings from Railtrack to meet the reasonable requirements of train operators and funders.

2.14 The ORR do not have the power to set legally binding standards of performance with which Railtrack must comply. This contrasts with the other utility industries where regulators, or the Secretary of State acting on the regulator's advice, set such standards for companies. But in 1997, the year after privatisation, the ORR proposed, and agreed with Railtrack, an amendment to the company's licence which now gives Railtrack a general duty to maintain, renew and develop the network (Figure 5). Using this provision, the ORR have since 1998 sought undertakings from Railtrack to meet the reasonable requirements of train operators and funders, as required by Railtrack's network licence.

2.15 Accordingly, the ORR have sought from Railtrack:

- commitments, which Railtrack undertake to achieve, covering key performance areas, such as reducing delays to trains;
- forecasts, which set out Railtrack's expectations in the longer term or in other areas, but which Railtrack are not committed to achieve.

Figure 11 summarises the commitments and forecasts provided by Railtrack in their 1999 Network Management Statement. The ORR have sought further commitments and forecasts from Railtrack as part of their current review of access charges. Railtrack's 2000 Network Management Statement, published on 30 March 2000, provided further information on Railtrack's expected future performance. The ORR are currently considering the Statement and consulting train operators and funders.

Examples of service improvement commitments and forecasts provided in Railtrack's 1999 Network Management Statement

Figure 11

Railtrack's 1999 Network Management Statement gave the ORR commitments and forecasts for service improvements for up to 10 years ahead

Commitments	Forecasts	Details
Train delays (1999-2006)	Train delays (2006-09)	Commitment to reduce train delay caused by Railtrack by 23 per cent by the year 2006. Forecast reduction of a further 4 per cent by 2009.
Track quality		Fifty per cent of track to meet the "very good" standard, 90 per cent to meet or exceed the "satisfactory" standard and 100 per cent to meet or exceed the "poor" standard.
Station facilities		Annual target improvements up to 2009 in accessibility, comfort and convenience, integrated transport, information and communications, and safety and security.
Station condition		By 2009 the average condition of stations to improve by 4 per cent from a score of 2.3 to a score of 2.2 (where 1 = the highest possible condition and 5 = the lowest).
	Temporary speed restrictions	Fifty seven per cent reduction in all speed restrictions by 2009. Speed restrictions over 3 months old to be reduced by 54 per cent by 2009.
	Broken rails	Thirty nine per cent reduction in broken rails by 2009.

Source: Railtrack's 1999 Network Management Statement

2.16 In their current review of Railtrack's access charges, the ORR plan to specify the outputs which they will expect Railtrack to deliver in the period 2001-06, based on the outcome of their consultation. They will require Railtrack to make commitments matching this specification.

The ORR have agreed targets with Railtrack to reduce train delays ...

2.17 Prior to the September 1997 licence amendment (paragraph 2.14), the ORR considered that they did not have the power to ask Railtrack to set targets for reducing train delays. Following the licence amendment, in 1998 the ORR required Railtrack to set such targets and ensure that they were significantly demanding. In response, Railtrack gave commitments in 1998 and 1999 to reduce the average time lost per train as a result of delays by:

- 7.5 per cent in both 1998-99 and 1999-2000;
- 5 per cent in 2000-2001;
- 2.5 per cent in each of the years 2001-02 to 2005-06.

These reductions related to all recorded delays attributable to Railtrack and not just those caused by inadequate maintenance and renewal.

... but Railtrack did not meet their 1998-99 target for passenger trains.

2.18 The actual reduction achieved in delays to trains in 1998-99 was 6 per cent in total, made up of a 16 per cent reduction for freight trains and a two per cent reduction for passenger trains. The two per cent reduction for passenger trains was well below the target of 7.5 per cent agreed with the ORR. The ORR have therefore told Railtrack that they must make up this deficit during 1999-2000 and also achieve the already agreed target of an additional 7.5 per cent reduction in passenger train delays on the 1998-99 target. And in November 1999 they made an enforcement order requiring Railtrack to reduce the delays they caused to passenger trains in the year to 31 March 2000 by 12.7 per cent.[14] The order would also subject Railtrack to a penalty of £4 million for each percentage point by which they fell short of this target. Railtrack are legally challenging the order, but the order stands in the meantime. In March 2000 Railtrack reported that they expected to achieve a reduction in 1999-2000 of 10 per cent, compared to the 12.7 per cent required by the ORR.

14 To achieve a 7.5 per cent annual reduction over each of the two years 1998-99 and 1999-2000, taking account of the 2 per cent improvement already achieved in 1998-99, Railtrack would need to reduce by 12.7 per cent the delays they cause to passenger trains in 1999-2000 compared with the preceding year.

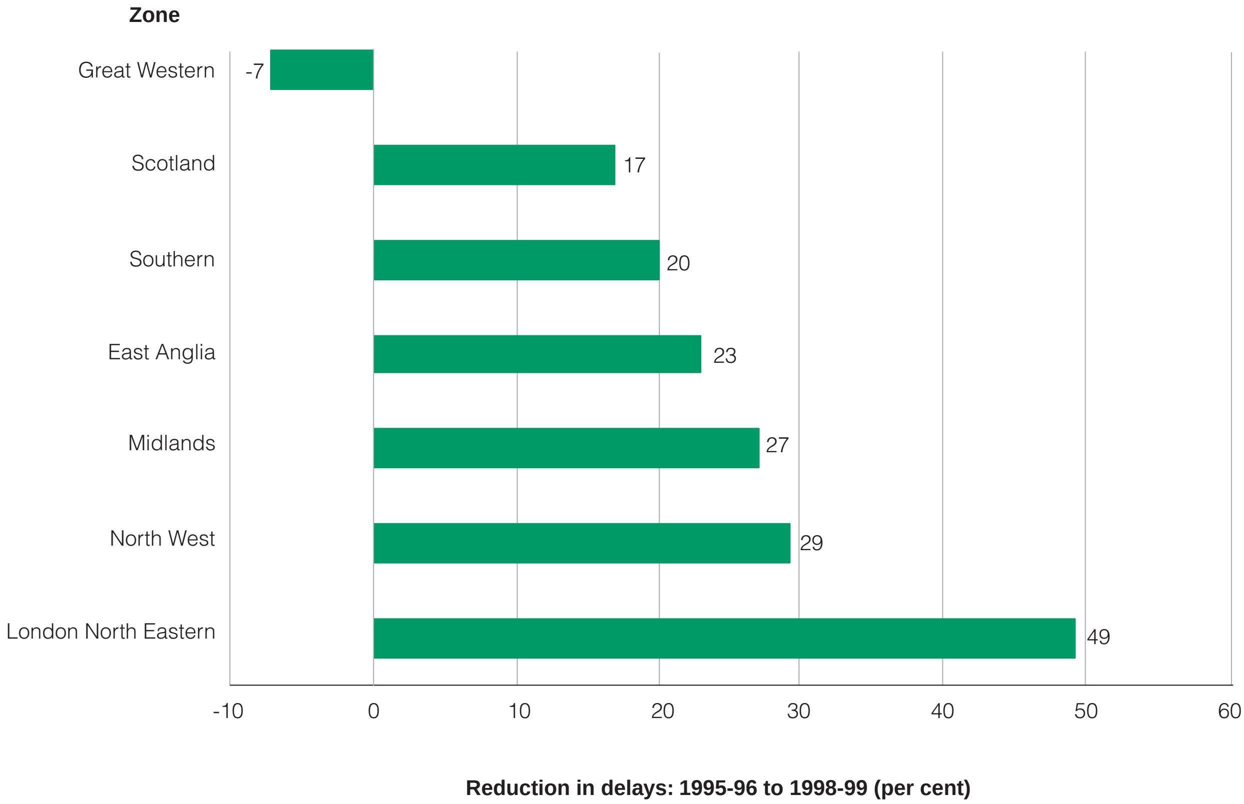
In general, the ORR have sought commitments for improved punctuality only at the national level.

2.19 The ORR have made clear to Railtrack that the measures they publish in their Network Management Statement should be disaggregated to meaningful levels to reflect train operators' and funders' requirements. Accordingly, Railtrack provide the ORR with unpublished regional information on train delays, covering each of Railtrack's seven zones and each train operator. This information shows considerable variations in performance between Railtrack's zones. For example, the best performing zone - London North Eastern - reduced delays caused by maintenance and renewal problems by 49 per cent between 1995-96 and 1998-99, but in the worst performing zone - Great Western - delays increased by 7 per cent (Figure 12).

Figure 12

Performance of Railtrack zones in reducing delays caused by maintenance and renewal problems: 1995-96 to 1998-99

Railtrack's performance in reducing delays caused by maintenance and renewal problems differs considerably between zones



Source: Railtrack

2.20 The ORR consider that an efficient network operator should be able to achieve a more consistent level of improvement across the network than Railtrack have achieved. And in 1999, because of the continuing poor performance in Railtrack's worst performing zone, Great Western, they considered requiring Railtrack to commit themselves to improvements in that zone. They have not required Railtrack to set targets for any parts of the network, or defined a minimum standard below which they consider no part of the network should fall, but they have indicated that, if there were to be evidence of a material failure in a particular zone, action would be considered. Railtrack have told us that improvements in Great Western zone's performance in 1999-2000 have put the zone's performance broadly in line with that of other zones.

The operation of the performance regime has brought Railtrack substantial benefits

2.21 In most regulated utility industries, companies have a strong incentive to ensure that they meet customers' needs: the more they sell of their product the greater their income will be; and, in competitive markets, if they fail to deliver, their customers may take their business elsewhere. For Railtrack these incentives are much reduced: they are a monopoly and 90 per cent of their income is fixed – only 10 per cent of their access charge income is dependent upon the number of trains that operators are able to run.

Contracts between Railtrack and the train operators contain performance bonuses and penalties.

2.22 The contracts between Railtrack and the train operators, approved by the ORR in 1995, contain a performance regime whose purpose is to give Railtrack comparable incentives to serve their customers well. The contracts provide for Railtrack to record all delays and cancellations and to identify the company responsible: Railtrack, the operator of the train concerned, or another operator. Every four weeks Railtrack calculate the average number of "minutes delay" against benchmarks of performance set in the contracts for each operator's services. If Railtrack do better than their benchmark the operator must pay them a bonus, and if Railtrack do worse they must pay a penalty to the operator.

2.23 The performance regime contains three other key elements:

- **Bonuses and penalties paid between Railtrack and their maintenance and renewal contractors.** These reward contractors if the delays caused by problems in their areas of responsibility (for example delays caused by track faults in the case of a track maintenance contractor) are below benchmarks in their contracts, and penalise them if delays are above the benchmarks.

- **Bonuses and penalties paid between Railtrack and the train operating companies for "possessions"** – temporary closures of lines while maintenance and renewal work is carried out. The train operators' track access contracts allow Railtrack to take an agreed number of possessions without charge, but if Railtrack exceed their allowance they must pay penalties to any operators whose services are affected.

- **"Access charge supplements"**. When the ORR approved charges in 1995, the potential cost to Railtrack of operating the performance regime was not taken into account. In order to take account of this additional cost, the ORR agreed an amendment to the access contracts before privatisation to require train operators to pay "access charge supplements" to Railtrack to compensate for this cost. The supplement payable by each train operator reduces to zero in 2000-01, giving Railtrack an incentive to make year-on-year reductions in delays to offset the fall in income from supplements.

2.24 Railtrack have responded positively to the performance regime by seeking ways to reduce their contribution to train delays. These include designating a senior manager with specific responsibility for improving performance; implementing a major project for developing management information and plans to identify and address the causes of delay; and carrying out selective renewal of items of equipment that are causing a disproportionate amount of delay.

In 1998-99 Railtrack earned a bonus of £25 million from the performance regime.

2.25 Railtrack's action to reduce delays has enabled them to derive a substantial financial benefit from the performance regime (Figure 13).For example, in 1998-99, Railtrack earned a net bonus of £25 million, when at the same time the ORR were considering enforcement action because Railtrack had not met a target agreed with them for reducing the level of delays in that year. Between 1995-96 and 1998-99 Railtrack benefited by a total of £139 million from the performance regime. It appeared likely in March 2000 that Railtrack would also receive bonuses for 1999-2000. These figures exclude costs incurred by Railtrack in their efforts to reduce delays because this expenditure is not separately identified in Railtrack's central records.

The ORR are reviewing the working of the performance regime.

2.26 The ORR are reviewing the operation of the performance regime in their current review of access charges. In doing so they will need to consider what the relationship should be in the future between the incentive regime created by the contracts approved by the ORR and the somewhat different regime provided by Railtrack's amended licence (paragraph 2.18).

The financial effect of the performance regime, 1995-96 to 1998-99

Figure 13

Railtrack have benefitted financially from the performance regimes, which have generated a net income of £139 million to 1998-99

	Amount received (paid out) by Railtrack (£m)				
	1995-96	1996-97	1997-98	1998-99	Total
Payments between Railtrack and train operators:					
Access charge supplements paid to Railtrack	92	99	79	57	327
Plus performance bonuses paid to Railtrack	-	31	23	16	70
Less performance penalty payments to train operators	-47	-	-	-	-47
Total payments from train operators to Railtrack	**45**	**130**	**102**	**73**	**350**
Less payments from Railtrack to maintenance and renewal contractors and other costs	-36	-61	-66	-48	-211
Net benefit to Railtrack from performance regimes	**9**	**69**	**36**	**25**	**139**

Source: Railtrack

2.27 The ORR are also considering in their review the benchmarks in the performance regime. The benchmarks used to assess the level of penalties and bonuses are based on the actual performance achieved during a "calibration period" in 1995-96, before privatisation. Consultants employed by the ORR, Booz-Allen and Hamilton, have identified a number of concerns about the level at which the benchmarks were set. The net effect of these concerns is to suggest that too high a proportion of delays might have been mistakenly attributed to Railtrack for that year. If this had happened it would have resulted in the benchmarks being set too high, which would have made it easier for Railtrack to beat them in later years. Railtrack reject this suggestion and point out that the Department of Transport set the benchmarks after consultation with the industry. The ORR have concluded that there is no strong evidence that Railtrack have enjoyed a windfall gain from the performance regime, but they will need to consider whether the benchmarks now need to be reset in the light of experience.

Part 3: The ORR are now seeking to improve their monitoring of the condition of the network

We examined the ORR's monitoring of the money spent by Railtrack to maintain and renew the network, the work carried out and the condition of the network.

3.1 This part of the report assesses how well the ORR have performed against their objectives by examining the maintenance and renewal work carried out by Railtrack on the network. Assisted by our consultants Europe Economics and Charles Haswell and Partners, we focused on two main areas:

- Railtrack's spending on maintenance and renewal;
- the amount of maintenance and renewal work carried out and the resulting condition of the network.

3.2 Railtrack are spending on maintenance and renewal at a rate of some £1.7 billion a year. The ORR have found it difficult, however, to establish whether Railtrack have carried out sufficient maintenance and renewal to meet the needs of the users of the network. They are seeking a clearer understanding with Railtrack on this matter when they set access charges for the period 2001 to 2006. Their monitoring of the condition of the network has shown a deterioration in the condition of the track, which Railtrack have undertaken to reverse, but the ORR are seeking further information to enable them to assess fully the condition of other types of assets, such as signalling equipment.

Railtrack's spending on maintenance and renewal to April 2001 will be £750 million higher than that forecast at privatisation

3.3 The general practice of utility regulators in the United Kingdom is not to require regulated companies to follow precisely the pattern or level of spending allowed for in setting price controls. The aim is to give companies an incentive to operate efficiently, by allowing them to profit if they can provide a good service to customers while spending less than allowed for. And once companies have improved efficiency in response to this incentive, the regulator can pass some of the benefit of it on to customers by reducing the companies' prices in the future.

3.4 Regulators still need to monitor companies' spending, however, to help them in setting the level of future price controls. The ORR also need to monitor Railtrack's maintenance and renewal expenditure because Railtrack were privatised on the basis that certain amounts would be spent on maintenance and renewal, and the proceeds of the privatisation may have been greater if less spending had been required. In addition, the ORR do not yet have good enough information on how well Railtrack are serving their customers and keeping their network in good condition to be sure whether or not differences between actual and expected spending are the result of efficiency and necessary change in the nature of work, rather than a failure to carry out necessary work. We examined, therefore, how much Railtrack have been expected to spend on maintenance and renewal and their actual spending to date.

Railtrack were originally expected to spend some £10.5 billion over six years on maintenance and renewal

3.5 Before Railtrack's privatisation, two baselines were established for the amount Railtrack were expected to spend on maintenance and renewal over the six years 1995-96 to 2000-01:

i) the maintenance and renewal expenditure that the ORR allowed for in 1995 in calculating the level of access charges for this period;

ii) the maintenance and renewal expenditure indicated in the prospectus issued by the Department of Transport for Railtrack's privatisation in May 1996.

In 1995 the ORR allowed for Railtrack to spend £9.2 billion on maintenance and renewal between April 1995 and March 2001.

3.6 The access charges currently paid by train operators to use Railtrack's network to run trains were set by the ORR in January 1995, when they set the charges for the period from 1 April 1995 to 31 March 2001. In calculating the level at which to set the charges, the ORR assessed the amounts needed for maintenance and renewal as follows:

- **Maintenance.** Railtrack had already entered into long term contracts with engineering companies for carrying out maintenance work. The ORR set the charges on the basis of the prices agreed in these contracts, providing £4.2 billion for maintenance in 1995-2001.

- **Renewal.** The ORR began their exercise to set the charges three months after Railtrack had been established, when Railtrack had neither assessed thoroughly the condition of the assets making up the railway network, nor developed plans for managing them. They therefore set the charges on the basis of the amounts included in Railtrack's business plan for the depreciation of these assets, providing £4.4 billion for asset renewal in their calculations. They also allowed for expenditure of £570 million on a special programme to recover a backlog of maintenance and renewal to stations and depots.

3.7 In this way, the ORR's calculations assumed total expenditure on maintenance and renewal by Railtrack of some £9.2 billion over the six years 1995-2001. They considered that this allowed Railtrack sufficient income to maintain the capability of the network and, where necessary, to carry out renewal in "modern equivalent form".[15]

Railtrack's 1996 prospectus indicated total spending of £10.5 billion on maintenance and renewal between April 1995 and March 2001.

3.8 Between the completion of the ORR's review in January 1995 and the privatisation of Railtrack in May 1996, Railtrack carried out further work to assess the state of the assets in the network and plan the maintenance and renewal work required to support train services. The prospectus for the privatisation issued by the Secretary of State for Transport drew on this work to include projections of the amounts that would be spent by Railtrack on maintenance and renewal. It showed actual expenditure by Railtrack on maintenance and renewal up to September 1995, and projected expenditure from 1996-97 to 2000-01, indicating that Railtrack would spend a total of £10.5 billion between April 1995 and March 2001. This was made up of £4.5 billion on maintenance, £5.1 billion on renewal, and £860 million on an expanded special programme of backlog maintenance and renewal at stations and depots.

3.9 The total expenditure of £10.5 billion on maintenance and renewal indicated in the prospectus was £1.3 billion more than the £9.2 billion the ORR had allowed for when they set Railtrack's access charges the previous year. Railtrack and the Department of Transport did not ask the ORR to reconsider the level of access charges in the light of this higher spending requirement. It was, however, taken into account in restructuring Railtrack's balance sheet prior to the company's privatisation in May 1996, and in the prospectus issued by the Department for the sale.

The ORR have not ensured that all key information on Railtrack's spending is independently verified

3.10 The ORR require Railtrack to provide information on the money spent on maintenance and renewal in four main documents: monthly reports on asset related expenditure, company profitability and cashflow; the annual Network Management Statement, which sets out planned expenditure; Railtrack's annual

15 When renewal is necessary, replacing old assets in the form of modern assets capable of doing the same job.

accounts; and a statement reconciling each year's actual expenditure with the plans in the preceding Network Management Statement. In common with several other regulators, the ORR receive in an agreed form a supplementary set of regulatory accounts submitted with each year's annual accounts.

Much of the information provided by Railtrack is not independently verified.

3.11 With the exception of the financial information in Railtrack's audited annual accounts, the ORR have not ensured that all key information they receive from Railtrack is independently verified. They do gain some assurance about its accuracy, however, by checking its internal consistency and by asking Railtrack to substantiate particular items of information. By comparison, the water regulator, the Office of Water Services (OFWAT), also receive audited financial information, but from the time of water privatisation they have also required water companies to employ independent reporters (usually consulting engineers) to scrutinise key information provided by the companies (Figure 14). In November 1999 the ORR announced plans for improving the information on the management of Railtrack's assets, including the establishment of a system of reporters (paragraph 3.34).

Figure 14

Independent validation of performance information in the water industry

Under the terms of its licence each water company must appoint a "reporter" to assist OFWAT by scrutinising, and giving his professional opinion on, information from the water companies, and by preparing supplementary reports on specific subjects.

OFWAT approve the water company's appointment of the reporter, whose contract with the water company can be no longer than 36 months. Reporters are independent of water companies and have a primary duty of care to OFWAT. The water companies pay for the costs of the reporters' work.

OFWAT review annually the performance of the reporters and their teams. The review covers the overall quality of the work, the degree of assistance they have provided to OFWAT, the ease of understanding of the reports they provide and the evidence of the technical expertise they have applied. OFWAT also carry out external reviews of the reporter arrangements.

Source: OFWAT

Railtrack report that their spending on maintenance and renewal in the six years to April 2001 will exceed that forecast at privatisation

The ORR's consultants have estimated that Railtrack will spend close to the amount expected in the 1996 prospectus but more than was expected when the ORR set access charges in 1995.

3.12 Between 1995-96 and 1998-99, the first four years of the price control period, Railtrack spent £7.0 billion on maintenance and renewal. The ORR were initially concerned that Railtrack's rate of spending was less than the ORR had allowed for. In their review of Railtrack's spending and future plans, however, the ORR's consultants, Booz-Allen and Hamilton, projected in March 1999 that Railtrack would spend a further £3.5 billion on maintenance and renewal in the remaining two years of the price control period from 1999-2000 to 2000-01. This would result in total expenditure over the whole period equalling the £10.5 billion indicated in the 1996 prospectus.

Railtrack now report that they will spend more than estimated by the ORR's consultants.

3.13 Figure 15 compares Booz-Allen and Hamilton's March 1999 spending projections with the amounts allowed for by the ORR in 1995 and the amounts indicated by the 1996 prospectus. It shows lower expenditure than projected on maintenance and the special programme of backlog station and depot maintenance and renewal. But projected spending on the renewal of all the other parts of the network, such as track, structures and signalling, would exceed both the amount allowed for by the ORR in 1995 and that set out in the prospectus. And in March 2000 Railtrack told the ORR that they expected to spend even more on renewal between April 1995 and March 2001 than the amount projected by Booz-Allen and Hamilton, and that they expected to spend some £750 million more than indicated in the 1996 prospectus.

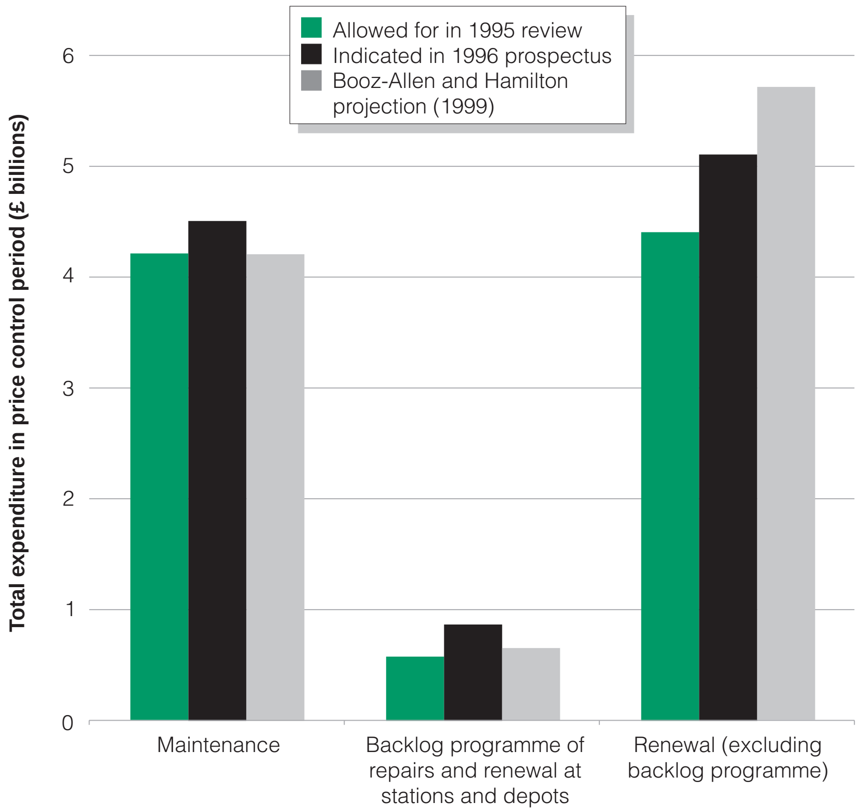
The ORR are minded to take some of the expected additional renewal spending into account in access charges from 2001.

3.14 As part of their current review of Railtrack's access charges from April 2001, the ORR have considered how, if at all, Railtrack should be able to pass on the cost of this additional renewal spending to their customers. The price control set in 1995 had allowed for the level of renewal spending that the ORR had then considered appropriate, and normal regulatory practice is to leave it to companies to meet the cost of any spending above the level allowed for in a price control. The key issue for the ORR has been, therefore, whether additional renewal spending above the level allowed for in 1995 should be added to the value placed by the ORR on the company's assets for the purpose of calculating what return on capital to allow for in setting Railtrack's charges from April 2001. Adding this spending to the asset base would have the effect of increasing the amount of profit allowed for in the ORR's calculations, and thus increasing the level of access charges.

Figure 15

Booz-Allen and Hamilton's projections of Railtrack's total expenditure on maintenance and renewal in the price control period, compared to 1995 review and 1996 prospectus

Booz-Allen and Hamilton projected in 1999 that Railtrack would spend slightly less on maintenance and the backlog programme than indicated in the 1996 prospectus, and slightly more on other renewal.



Sources: National Audit Office analysis; Booz-Allen and Hamilton

3.15 In their draft conclusions for the review published in December 1999 the ORR concluded that they should include in Railtrack's asset base the additional renewal spending indicated in Railtrack's prospectus, but that any further spending above this level should be disregarded.

3.16 Two main arguments led the ORR to this conclusion. The first was that they considered that the spending projections in the 1996 prospectus superseded those that underlay the price control that they had set in the previous year. Because access charges continued to be limited by the price control, and the price control was based on a lower level of spending on renewal than indicated in the prospectus, the company had taken on a financial liability to pay for the extra work from its own resources. By carrying out this work, Railtrack had discharged this liability and the ORR considered that it was right for them to recognise that Railtrack had done so.

3.17 The second argument was that the ORR intended to value the company's asset base on the basis of the price paid by shareholders when the company was sold in 1996. Part of this price consisted of the proceeds received by the Government from the sale. But the ORR considered that acceptance of the company's liability to pay for additional renewal work from its own resources also formed part of the price paid by shareholders. The ORR took the view, therefore, that, in order to base the regulatory asset base on what shareholders had paid for, they needed to add the cost of this work to the proceeds received by the Government from the sale.

3.18 The ORR concluded, however, that Railtrack should bear the cost of the £750 million by which Railtrack projected in November 1999 their renewal spending would exceed the level indicated in the prospectus. The ORR also noted that Railtrack had benefited from a change between 1995 and 1996 in their expected tax liabilities following privatisation. The ORR proposed, therefore, to add £320 million to the company's asset base, arrived at by offsetting the reduction in their tax liability against the additional spending indicated in the 1996 prospectus.

Railtrack have put forward options amounting to some £52 billion for spending over the next 12 years on maintenance, renewal and enhancement

3.19 Railtrack's 2000 Network Management Statement included options amounting to some £52 billion (at 1999-2000 prices) for spending over the next 12 years to maintain, renew and enhance the network. This total is made up of:

- **£27 billion to maintain and renew the existing network** and carry out enhancements to which Railtrack are firmly committed; and, against a background of growing demand for rail travel, to improve its performance, including expenditure averaging £2 billion a year on maintenance and renewal up to 2005-06. Railtrack aim by 2010-11 to reduce the average delay they cause to trains by 24 per cent on 1999-2000 levels and nearly halve the number of speed restrictions. The ORR's current review of access charges is assessing the charges that train operators should pay for running the services set out in their current contracts with Railtrack. The ORR will therefore need to assess how much train operators, who are the main source of Railtrack's income, should contribute towards the cost of maintaining and renewing the existing network and hence consider whether Railtrack need as much as £27 billion to do so.

- **£25 billion to enhance the network,** for example, by remodelling junctions to increase the capacity of congested routes. This element is outside the scope of the ORR's current review of track access charges. In most cases Railtrack did not commit themselves to carry out the proposed enhancement options and it is for train operators and public sector funders, especially the Franchising Director and the Shadow Strategic Rail Authority, to consider whether they wish to buy the increased capacity or capability proposed. If Railtrack proceed with any of these options the ORR will be required in due course to approve track access contracts for train operators to use the network enhancements provided.

3.20 The principal focus of the ORR's current review of Railtrack's track access charges is on the level of charges required for Railtrack to provide the services set out in their current contracts with train operators and to finance the provision of these services. If the ORR conclude that the access charges can be reduced, the franchise agreements between the passenger train operator and the Franchising Director require this reduction to be passed on to the Shadow Strategic Rail Authority through a reduction in subsidy (or an increase in the amount paid to the Authority by the small number of operators who do not receive subsidy). The Shadow Strategic Rail Authority told us, however, that if the charges are reduced, they might prefer to use the money made available to pay for a higher standard of performance by Railtrack or to pay for improvements in the network, and that the ORR are consulting them closely on this matter.

3.21 The ORR are considering the plans and proposals in Railtrack's 2000 Network Management Statement. Their intention is that the 2000 Network Management Statement should provide a basis for setting out Railtrack's commitments for maintaining and renewing the network during the period 2001-06 when the ORR set access charges for this period in July 2000.

The ORR have found it difficult to establish whether Railtrack have carried out sufficient maintenance and renewal and are now seeking improved information

3.22 With the assistance of our consultants Europe Economics and Charles Haswell and Partners we examined how the ORR have sought to assess whether Railtrack have carried out sufficient maintenance and renewal. This is a key issue for the ORR for two reasons:

- any failure by Railtrack to carry out necessary work can be expected to affect services to customers or the condition of the network, although not always immediately;

- if the ORR can satisfy themselves that Railtrack are doing all that is needed, they can be confident that if Railtrack spend less than expected on maintenance and renewal this is because of improved efficiency rather than a failure to carry out necessary work.

The ORR have not specified what maintenance and renewal work Railtrack need to carry out.

3.23 The ORR have not specified how much work Railtrack need to carry out to discharge their obligations to maintain and renew the network. Their approach has been to set the outputs that Railtrack should deliver, in terms of both the performance of the network and the condition of assets; to assess Railtrack's plans for delivering these outputs; and then to assess the efficiency and effectiveness with which they have been delivered.

3.24 Railtrack's assessment of what work is needed is set out in their:

- **Asset Maintenance Plans.** These are statistically based estimates of the work Railtrack considered was required to keep the network in a satisfactory condition. Railtrack drew up such plans before privatisation for track and structures but not for other assets. These plans were updated in 1998 and additional plans were drawn up for signalling in 1999.

- **The Network Management Statements** published annually by Railtrack in accordance with their network licence. The Statements contain Railtrack's plans for the maintenance, renewal and enhancement of the network for a 10 year period, with greater detail for the first three years of the programme.

The ORR receive information annually from Railtrack on renewal work carried out.

3.25 The ORR have not sought to obtain information from Railtrack on how much maintenance activity they carry out because they have considered that the effectiveness of this work is quickly evident in the performance of the network, for example in delays and cancellations. As regards the amount of renewal, since 1998 the ORR have received information from Railtrack annually on the amount of renewal carried out on the four main types of assets making up the network (see paragraph 3.37 below).

But they have had difficulty in monitoring the condition of the network ...

3.26 Charles Haswell and Partners advised us that in their view it should have been a priority for the ORR to devise in conjunction with Railtrack a consistent set of performance indicators for maintenance and renewal activity, with unambiguous definitions, either before privatisation or as soon as possible afterwards. This is because although it is desirable that performance indicators should measure the performance of the network, for example in terms of train delays, the complexity of the network and the variety of the assets making it up mean that this performance cannot always be immediately related to the level and quality of maintenance and renewal activity. And while some activity can lead to immediate performance enhancement, other activity can have benefits only over the long term or in conjunction with other expenditure.

3.27 The ORR agree that they have sought to achieve these aims, so far as is possible given the wide variety in the outputs delivered by Railtrack's network. But they have also found it hard to assess Railtrack's performance in ensuring that the assets making up the network are in a satisfactory condition. There have been three main difficulties:

- the ORR's concept of renewing assets in "modern equivalent form" has been difficult to apply in practice;
- the ORR have been unable to determine whether the amount of renewal carried out has been sufficient to maintain the network in a satisfactory condition;
- Railtrack have changed their approach to deciding when it is necessary to renew assets.

... because the concept of renewing assets in "modern equivalent form" has been difficult to apply in practice;

3.28 In setting the current access charges in 1995, the ORR said that, where asset renewal was necessary, they expected Railtrack to replace old assets by assets in the form of their modern equivalents, capable of doing the same job. For example, when rail is renewed they would expect it normally to be replaced with continuous welded rail. The ORR have consistently said to Railtrack that they have expected them to renew assets in this form. But at privatisation there was a lack of performance indicators for the condition of Railtrack's network, and the ORR did not provide any clear guidance on how Railtrack should apply this concept. In 1997 the ORR amended Railtrack's network licence to require them to develop investment criteria showing, amongst other things, how they intended to apply this concept. The ORR have commented on these criteria but they have not finally approved them, in order to see first how they work in practice.

3.29 Railtrack told us that the concept of modern equivalent form has lacked clarity and has been difficult to apply in practice: it was often a subjective judgement as to what was the modern equivalent of an ageing asset. For example when new assets have been capable of doing a better job than those they have replaced there has been difficulty in determining whether the replacement constitutes renewal, which is paid for from existing access charges, or enhancement, for which Railtrack are entitled to charge extra. The concept had therefore had little influence on Railtrack's renewal policy. Such difficulties have weakened the ability of the ORR and Railtrack to judge whether since 1995 Railtrack have delivered what they should. Train operators have also criticised the concept as imprecise. The ORR intend to make much less use of this requirement when they set access charges for the period from 2001 to 2006 and to provide a clearer framework for how expenditure on enhancing the network is to be monitored and paid for.

... because they have been unable to determine whether the amount of renewal carried out has been sufficient to maintain the network in a satisfactory condition;

3.30 When they set the current access charges in 1995, the ORR did not specify, or agree with Railtrack, how much renewal they expected Railtrack to carry out. This was not practicable at the time because Railtrack had not yet developed their plans for maintaining and renewing the network, and only limited information was available centrally within Railtrack on the state of the network and the amount of renewal that needed to be done. There was thus a limited understanding of what future expenditure requirements were needed. As a result, the ORR have found it extremely difficult to establish whether the renewal actually carried out by Railtrack is enough to discharge their obligation to keep the network in a satisfactory condition. This problem is particularly acute in areas such as signalling, where the ORR do not currently have a satisfactory method of monitoring the condition of the assets. Railtrack told us that because of this problem, and the lack of any specified output requirements from the ORR before 1998, they have found that the ORR's expectations have been unclear and unpredictable.

... and because of changes in Railtrack's approach to deciding when to renew assets.

3.31 Railtrack have considerable flexibility as to when and how they renew much of the network. For example, spending more on maintenance can allow renewal to be deferred, while assets might be renewed earlier than planned if it would be convenient to do so as part of a major redevelopment project. Railtrack seek to base decisions on when to renew assets by comparing the cost of renewal with the cost of maintaining assets as they age and with the penalties imposed on them through the performance regime as the reliability of assets declines.

3.32 Since privatisation, Railtrack have reviewed their renewal policies on this basis. As a result, they have changed the emphasis of their approach from renewing assets primarily on the basis of their age to renewal based on asset condition. In addition they have sought to focus renewal on those parts of systems that are in poor condition, rather than carrying out large-scale renewals of whole systems. This applies particularly to signalling equipment where they have been able to defer the renewal of assets that they judge still to be in a satisfactory condition.

3.33 This change of approach has been developed within the framework of investment criteria drawn up by Railtrack in accordance with their Licence. It can benefit customers if it reduces the overall cost of maintaining and renewing the network: the ORR would then be able to pass the cost reduction on to customers by setting access charges at a lower level. It does, however, make the ORR's monitoring more difficult: changing to a selective approach increases the average age of the assets, thereby suggesting – perhaps wrongly – that the condition of the network is deteriorating. Railtrack also need to have very good information on the condition of assets to ensure that renewal still takes place before assets fail in service. Such failures could be very disruptive to customers because of the time needed to carry out any necessary repairs or renewals and the difficulty in such circumstances of arranging work so as to avoid inconvenience to customers.

The ORR are seeking to improve their monitoring of the condition of Railtrack's assets.

3.34 In order to address these issues the ORR announced in November 1999 plans to improve the information held by Railtrack on their management of the assets making up the railway network. The plans had two aims: to improve Railtrack's performance in maintaining and renewing the network, and to improve the information available to the ORR on Railtrack's performance in this regard. The ORR planned to:

- Amend Railtrack's network licence, subject to consultation on the proposed amendment, to require Railtrack to establish a register of the nature and condition of key asset categories and to populate the register with data.

- Require Railtrack to finalise broad measures of the condition of major asset categories, with supporting data where available, to be incorporated in Railtrack's 2000 Network Management Statement, and to remedy any gaps in supporting data for the 2001 Statement.

- Require Railtrack to develop reliable data on the capability of the network (for example, recording the gauge, maximum permitted axle weights and extent of electrification of routes).

- Establish a system of reporters to verify asset condition data and to provide independent reports to the ORR on the serviceability and condition of the network assets, similar to the system operated by OFWAT (Figure 14).

3.35 Railtrack told us that they have reservations about how much detailed national monitoring of most assets is required, and they consider that the ORR should focus primarily on Railtrack's performance, for example in terms of network capacity, train delays and ride quality. They were, however, seeking to improve the information they provide the ORR on these matters, for example in the 2000 Network Management Statement which the ORR are currently considering.

The ORR have commissioned consultants to assess Railtrack's performance

3.36 As part of their current review of access charges, the ORR commissioned engineering consultants, Booz-Allen and Hamilton, in 1998 to review Railtrack's performance over the period 1995 to 2001 and to compare the amount of maintenance and renewal carried out by Railtrack with Railtrack's own assessments of what was required. This comparison was only possible, however, in respect of track and structures, because these were the only areas for which Railtrack's plans included physical quantities of the amount of work to be done. Because the work and performance expected from Railtrack had not been clearly defined from the outset by the ORR (paragraph 3.30), part of the consultants' task was to advise the ORR on what they should expect Railtrack to have delivered in 1995.

3.37 Against this background, we examined what the ORR have established about the maintenance, renewal and condition of the four main types of assets making up the network:

a) track;

b) structures, such as bridges and tunnels;

c) stations;

d) signalling equipment.

3.38 Figure 16 analyses renewal expenditure by type of asset. It shows that Railtrack plan to spend more on the renewal of track, structures, stations and depots, and other assets, principally plant and machinery, than they indicated in the prospectus. They plan to spend less on renewal of signalling and electrical equipment for the reasons given in paragraphs 3.31 to 3.32 above.

Booz-Allen and Hamilton's 1999 projection of Railtrack's expenditure on maintenance and renewal in the price control period compared to 1995 review and 1996 prospectus

Figure 16

Railtrack are now projected to spend less on maintenance, signalling, electrification and the backlog programme than indicated in the 1996 prospectus, and more on other types of renewal

	Allowed for by the ORR in 1995 review £ billion	Indicated in 1996 prospectus £ billion	Booz-Allen and Hamilton's 1999 projection £ billion
Maintenance	4.2	4.5	4.2
Renewals			
Track		1.6	1.8
Structures		0.9	1.2
Stations and depots		0.6	0.8
Signalling		1.5	1.4
Electrification		0.2	0.1
Other		0.3	0.4
Total renewals	4.4	5.1	5.7
Backlog - stations and depots	0.6	0.9	0.6
Total	**9.2**	**10.5**	**10.5**

Sources: National Audit analysis; Booz-Allen and Hamilton; Department of the Environment, Transport and the Regions

Track condition has deteriorated but Railtrack have now undertaken to restore it

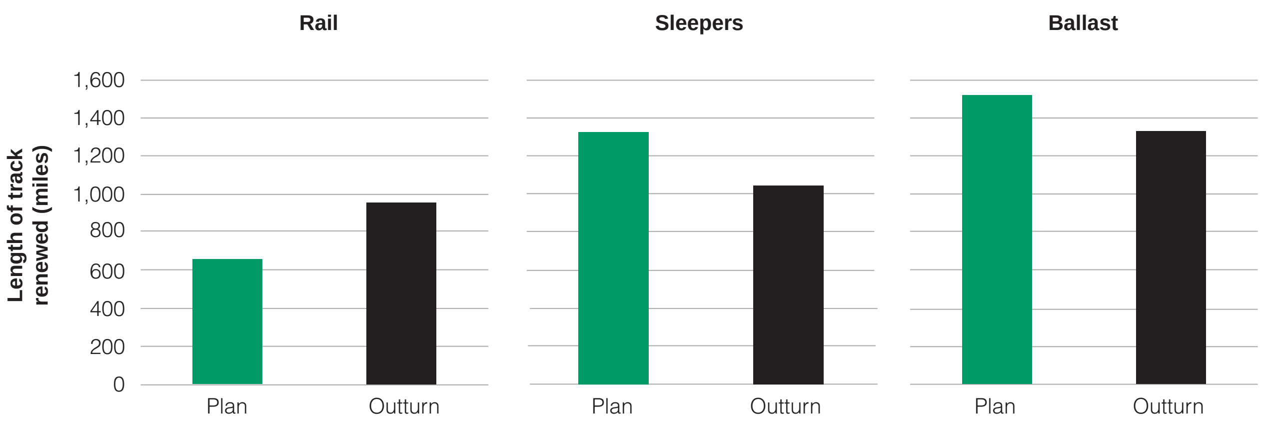
Railtrack have renewed more rail than planned, but less sleepers and ballast.

3.39 Track consists of three components - rails, sleepers and ballast – which can be renewed separately. Figure 17 compares the annual amounts for each of these components in Railtrack's Asset Maintenance Plans for 1995-96 to 1998-99 with the amounts actually renewed. It shows that by 1998-99 Railtrack had renewed more rail than required by the Asset Maintenance Plan, but had renewed less sleepers and ballast.

Figure 17

Track renewal - 1995-96 to 1998-99

This figure shows that between 1995-96 and 1998-99 Railtrack renewed a greater amount of rail than planned but a smaller amount than planned of sleepers and ballast.



Source: National Audit Office analysis; Booz-Allen and Hamilton; Railtrack

3.40 By 2000-01 Railtrack planned to have renewed 1,400 miles of rail since 1995-96, 50 per cent more than estimated in their Asset Maintenance Plans. They also planned to have renewed 1,500 miles of sleepers and 1,900 miles of ballast – 80 per cent and 83 per cent respectively of the figures in the Asset Maintenance Plans (Figure 18).

3.41 Booz-Allen and Hamilton have told the ORR that they believed that rail renewal had exceeded the Asset Maintenance Plan requirements because it has a direct short-term effect on performance. They were concerned, however, that the lower rates of renewal for sleepers and ballast created a high risk of declining track quality and would lead to a significant backlog of renewals work.

Projected track renewal - 1995 to 2001

Figure 18

Railtrack are projected to renew more rail than was estimated in 1996 to be required, but less sleepers and ballast.

Track component	Projected total amount renewed	
	Miles	Percentage of Asset Maintenance Plan requirement
Rail	1,400	150 per cent
Sleepers	1,500	80 per cent
Ballast	1,900	83 per cent

Sources: National Audit Office analysis; Booz-Allen and Hamilton

The ORR monitor the condition of track.

3.42 The ORR monitor the condition of track through information provided to them by Railtrack on the alignment of track, the number of speed restrictions imposed as a result of poor track condition (see Part 2) and the number of broken rails.

3.43 The comfort of the ride experienced by passengers is greatly affected by the vertical and horizontal alignment of the track. Railtrack assess track quality for all parts of the network at least once a year by using special vehicles that measure and analyse track alignment. Track alignment is compared to standards inherited from British Rail and each section of track is classified as being in very good, satisfactory, poor or very poor condition. Railtrack aim to ensure that at least 50 per cent of track meets the "very good" standard, at least 90 per cent meets the "satisfactory" or "very good" standards, and none falls below the "poor" standard.

Railtrack have not met their targets for the quality of track.

3.44 Figure 19 shows that since 1994 Railtrack have met the target for the amount of "very good" track in every year, but that they met the 90 per cent "satisfactory" target in 1994 only and that every year some track has fallen below the "poor" standard. In addition, track quality across the network deteriorated between 1994 and 1996, when Railtrack were privatised, and it has yet to regain the levels of April 1994. Some 3 per cent of track is currently rated "very poor". Track quality also varies markedly across the network: in 1998 it was worst in Railtrack's Southern zone[16], where 15 per cent of track fell below the "satisfactory" standard; and it was best in Scotland, where only 5 per cent of track fell below this standard.

The ORR have taken action to require Railtrack to improve track quality.

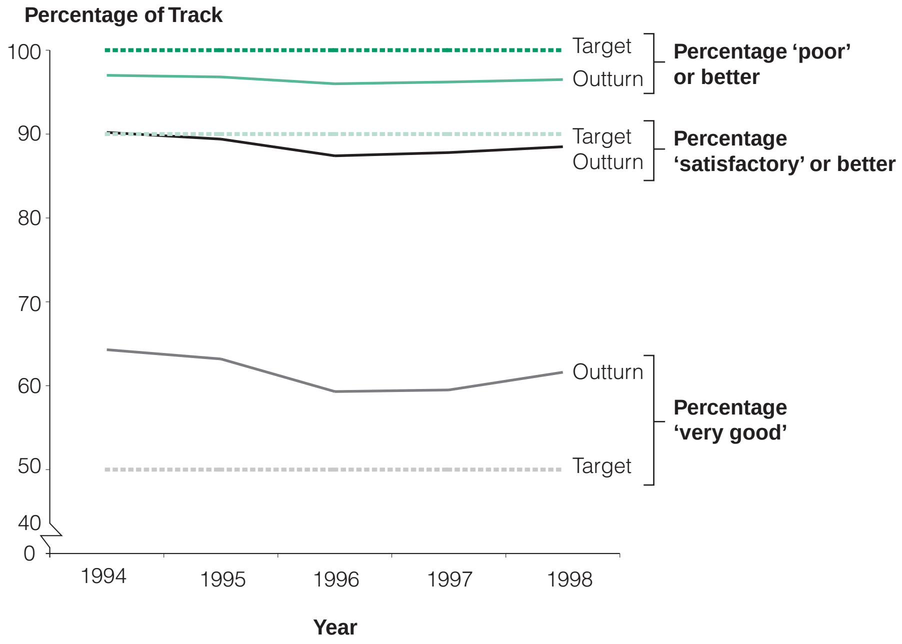
3.45 The ORR became aware in 1998 of the deterioration in track quality. They were also concerned that Railtrack did not have an adequate plan for improvement. In July 1998 they therefore required Railtrack to produce a plan to reduce as far as practicable the amount of track not meeting their own minimum

16 Railtrack's Southern zone covers most of England south of the Thames, except for the West Country.

Track Quality - 1994 to 1998

Figure 19

This figure shows how track quality changed between 1994 and 1998.



Sources: National Audit Office analysis; Booz-Allen and Hamilton

standards and to restore track condition to at least its 1994 level by April 2000 where maintenance is required, and by April 2001 where renewal is required. Railtrack published and began implementing this plan in January 1999. The ORR have commissioned an independent expert to assess Railtrack's implementation of their plan and are considering his report.

The number of broken rails has increased.

3.46 The number of broken rails also provides an indication of the quality of track and the effectiveness of both Railtrack's control of their maintenance contractors and Railtrack's policy on when to renew older assets. In 1997-98 the number of broken rails on the network increased to the 1995-96 level of around 750 after a reduction of some 6 per cent in 1996-97. In 1998 Railtrack forecast a reduction in the number of broken rails to 600 in 1998-99 and 450 in 1999-2000, but in the event the number in 1998-99 increased by 27 per cent to 937. And in 1999, an increase in the number of broken rails in the Severn Tunnel following a change in renewal practice prompted the Health and Safety Executive to order Railtrack to replace track in the tunnel and to restrict the speed of trains in the tunnel until they had done so.

3.47 Railtrack have now set themselves a revised forecast of reducing the number of broken rails to 770 in 1999-2000 and making further reductions in later years. The ORR have been concerned, however, that this forecast may not produce the lowest number of broken rails reasonably practicable. They have not specified what that number might be but they have told Railtrack that they must reduce significantly the number of broken rails, and have asked for detailed information on the cause of broken rails and Railtrack's action to reduce their number. This step may lead to enforcement action if the ORR conclude that Railtrack are in breach of their network licence. Railtrack told us that the number of broken rails had been affected by the large increase in freight traffic in recent years and they did not believe that it indicated that they were in breach of their responsibility to maintain the network. In their 2000 Network Management Statement, Railtrack reported that they estimated that the outturn number of broken rails in 1999-2000 would be 916.

The ORR do not know whether the condition of structures is satisfactory

3.48 Structures associated with the rail network include bridges, tunnels and embankments. The type of work carried out by Railtrack on structures ranges from minor maintenance, such as painting, to partial or total renewal. Bridges account for around three-quarters of the work on structures.

The amount of renewal work carried out by Railtrack on bridges is close to that planned.

3.49 Between 1995-96 and 1997-98 Railtrack renewed some 399 bridge spans, compared with the 416 forecast in their Asset Maintenance Plans. By 2000-01 Railtrack plan to have renewed 611 bridge spans compared with the 625 estimated in the Asset Maintenance Plans. Figure 20 shows that there was a sharp increase from 1995-96 to 1997-98 in the rate of work, which is expected to be followed by lower levels of activity for the remainder of the price control period to 2000-01.

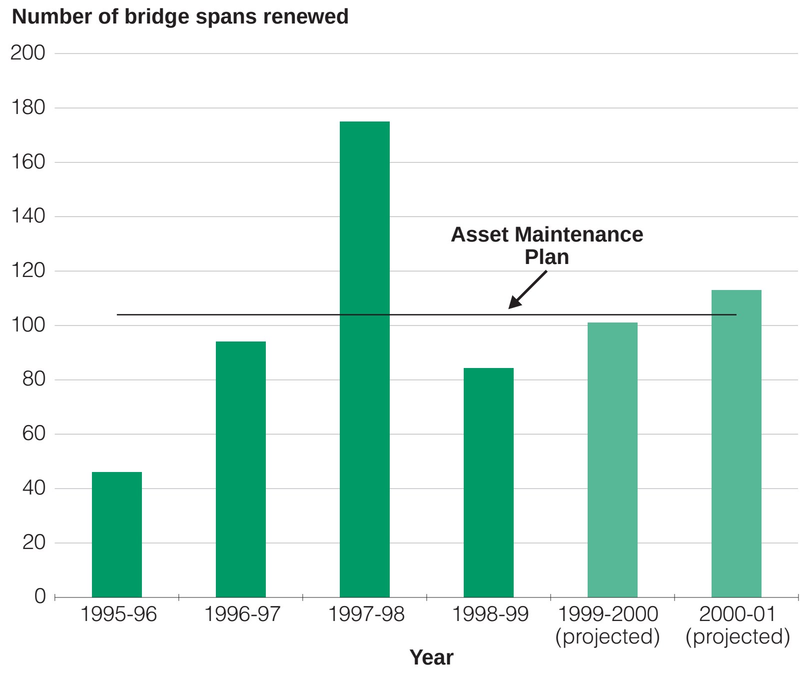
The ORR have no information on the condition of structures and have asked Railtrack to devise appropriate measures.

3.50 The ORR do not currently monitor the condition of structures and Railtrack do not hold centrally information summarising their condition. The ORR have been unable, therefore, to form an opinion on the condition of structures. They have asked Railtrack to devise measures of asset condition for structures for inclusion in their 2000 Network Management Statement and are considering those that Railtrack have provided. The ORR's consultants, Booz-Allen and Hamilton, told us that, compared to the water industry which faced similar problems at privatisation, Railtrack have been very slow in determining the condition of their structural assets and devising suitable measures for them.

Bridge renewal - 1995-96 to 2000-01

Figure 20

This figure shows the actual and planned rate of bridge renewal between 1995-96 and 2000-01.



Sources: National Audit Office analysis; Booz-Allen and Hamilton

Railtrack's progress on their programme of station improvements

3.51 There are some 2,500 stations on Railtrack's network. Railtrack operate 14 of the stations and the remainder are leased to the passenger train operators, who are responsible for routine maintenance. Railtrack are responsible for structural repairs and non-routine maintenance on these stations and for all maintenance and renewal work on the 14 stations they operate themselves.

Railtrack are carrying out a special programme of station repair and renewal ...

3.52 For the period to 2000-01, Railtrack have developed a programme of maintenance and renewal work - the "station regeneration programme" - to reverse the decline in the condition of stations that occurred under British Rail. The programme consists mainly of work on existing stations and only 26 stations – around one per cent of the total – are to be wholly replaced.

3.53 In their 1995 review of access charges the ORR provided for expenditure of £570 million on this programme. They expected the programme to be completed by the end of the price control period in March 2001. The cost of the programme had increased by the time of Railtrack's privatisation in 1996 and the prospectus indicated a higher level of expenditure - £860 million - but the same completion date.

... but this programme was slow to start.

3.54 Following Railtrack's privatisation in May 1996, the ORR quickly became concerned that Railtrack had been slow to start the programme. Expenditure has accelerated since then, but by the end of March 1999, two-thirds of the way through the price control period, Railtrack had still spent only £330 million on the backlog programme. This amount was 59 per cent of the amount allowed for by the ORR in 1995 and 39 per cent of the amount indicated in the prospectus. Work had been completed at 1,425 stations (57 per cent) compared with the 1,300 planned.

3.55 Railtrack considered that, because of the size of the programme, initial estimates of likely progress were optimistic and that preparatory work, in particular the establishment of contracting arrangements, took longer than expected. Railtrack forecast a significant increase in the rate of completions, but Booz-Allen and Hamilton expected in March 1999 that work at some 250 stations – 10 per cent of the total covered by the programme - would not be completed by 2000-01, the programme's planned completion date. They estimated that Railtrack would spend around £760 million in completing the programme - £640 million by the end of the price control period in March 2001 and £120 million in the following year. They told us that there has also been a wide variety between Railtrack zones in the quality and scope of the work completed under the programme.

3.56 In March 2000, Railtrack told us that they had made further progress during 1999-2000. They said that they expected that by the end of 1999-2000 they would have spent a further £290 million in stations and depots and met their internal target of completing 82 per cent of the programme by this date. Railtrack said that they expected to have completed the full programme by the target date of April 2001 with the exception of only a handful of stations – mostly major stations – where work would be included as part of major development proposals.

The ORR are considering what action to take in response to the delay.

3.57 The ORR are currently consulting train operators on their views of the progress of the station regeneration programme and have told Railtrack that they expect them to recover as much lost ground as possible. They are also considering what action to take in response to the predicted delay in completing it and whether there is scope to recover some of the delay that has occurred so far.

There is some doubt as to whether stations have been renewed in modern equivalent form …

3.58 The main aim of the station regeneration programme has been to catch up with a backlog of maintenance. The extent to which the renewal of stations had been in modern equivalent form has, however, been unclear. Customers are now used to better facilities than was the norm when many older stations were built and simply restoring stations to their original condition might not fully meet customers' reasonable expectations. It is possible, therefore, that future renewal expenditure on stations might need to be increased. The Health and Safety Executive also told us that they had been disappointed that Railtrack had missed some opportunities to make low cost safety improvements as part of the programme, for example, by using the opportunity of work to rebuild platforms to reduce gaps between platforms and trains.

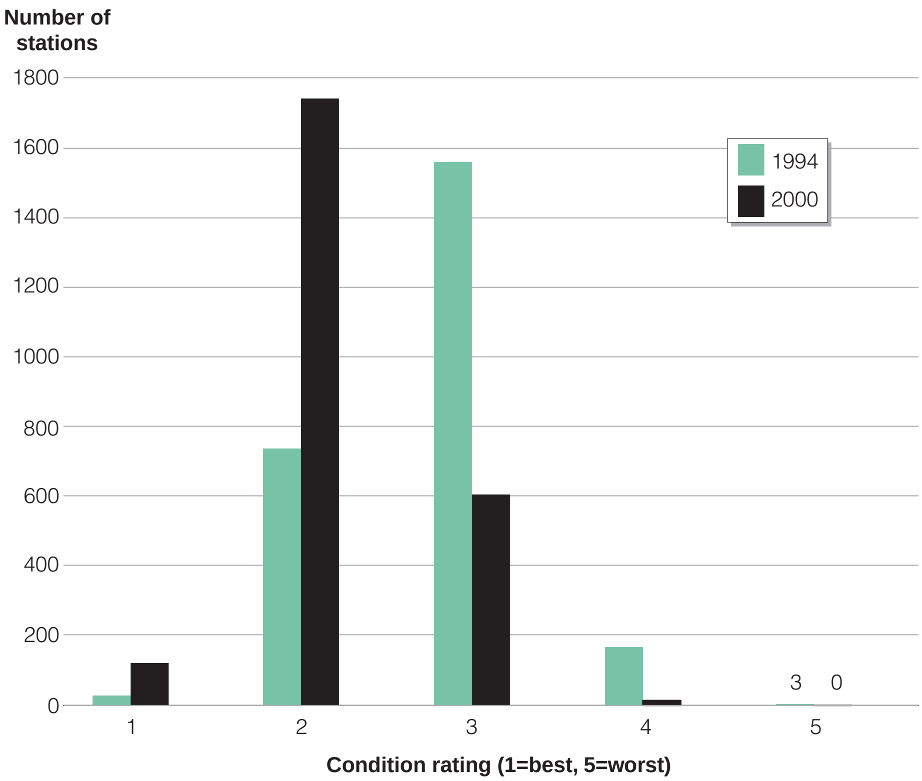
… but Railtrack report that the average condition of stations has improved.

3.59 Railtrack assess the condition of stations using a rating system in which stations in the highest possible condition are rated "1" and those in the lowest are rated "5". Using this system, they report that the average rating of stations improved between 1994 and 1999-2000 from 2.7 to 2.3 and that in 1999-2000 three quarters were rated "1" or "2" compared to less than a third in 1994 (Figure 21).

Railtrack's assessment of the condition of stations: 1994 and 2000

Figure 21

This figure shows that Railtrack have reported that since 1994 the proportion of stations with a high condition rating (1 or 2) has increased



Source: Railtrack

Railtrack have plans for improving station facilities over the next 12 years.

3.60 In their 2000 Network Management Statement Railtrack outlined plans to improve station facilities over the next 12 years. The ORR are also considering introducing output targets to encourage Railtrack to improve the quality of station facilities, for example, by specifying a minimum proportion of category A stations (major national hubs, such as Birmingham New Street) that must have good accessibility.

The ORR have insufficient information on the condition of signalling equipment

The amount of track resignalled has declined because of a change in Railtrack's approach to renewing signalling equipment.

3.61 In 1995 Railtrack made an initial estimate of the amount of signalling renewal that was required. They assessed the condition of signalling equipment in over 130 representative sites and estimated that the average remaining life for signalling assets was 11 years. They concluded that the signalling assets were performing well and that the renewal programme should take into account the development of new technologies, which were unlikely to be realised until 2003. These new technologies were considered likely to bring significant price reductions. Railtrack decided that where possible the replacement of existing equipment should be deferred until new technology became available. The asset maintenance plan did not specify the amount of signalling renewal that would need to be carried out but Railtrack planned a substantial programme to replace first generation power signalling systems installed in the 1950's and 1960's.

3.62 Since 1995, Railtrack have reviewed the costs and benefits of signalling renewal and have concluded that costs would be minimised by carrying out targeted renewals of equipment approaching the end of its useful life, rather than large scale renewal of whole installations. At the same time the development of new signalling technologies has been slower than Railtrack expected in 1995. Accordingly they have changed the programme of major resignalling schemes inherited from British Rail, so as to concentrate more on the renewal of smaller components based on their condition and on extending the life of existing equipment. As a result, following a sharp increase in renewal activity from 1995-96 to 1997-98 as schemes inherited from British Rail were completed, this work is expected to decline between 1998-99 and 2000-01. By the end of the current price control period in 2001, Railtrack plan to have renewed the signalling for some 1,180 miles of track.

3.63 Railtrack consider that using the amount of track that has been resignalled as a measure of activity is no longer satisfactory because of their move since 1995-96 away from major schemes towards the renewal of smaller components and extending the life of existing equipment. The ORR have therefore asked Railtrack to examine alternative measures of activity for monitoring their performance.

Failure rates for signalling equipment have remained relatively stable since 1996-97.

3.64 In 1997-98 there were some 117,000 failures of points, track circuits and level crossings. The Health and Safety Executive told us that such failures will not affect safety because signalling systems are designed to fail safe, usually by preventing a piece of track being used if there is a signalling fault affecting it. Such failures may, however, often cause the delay or cancellation of trains. Figure 22 shows that overall failure rates for signal-related equipment, after declining by about 10 per cent in 1996-97, have since remained relatively stable.

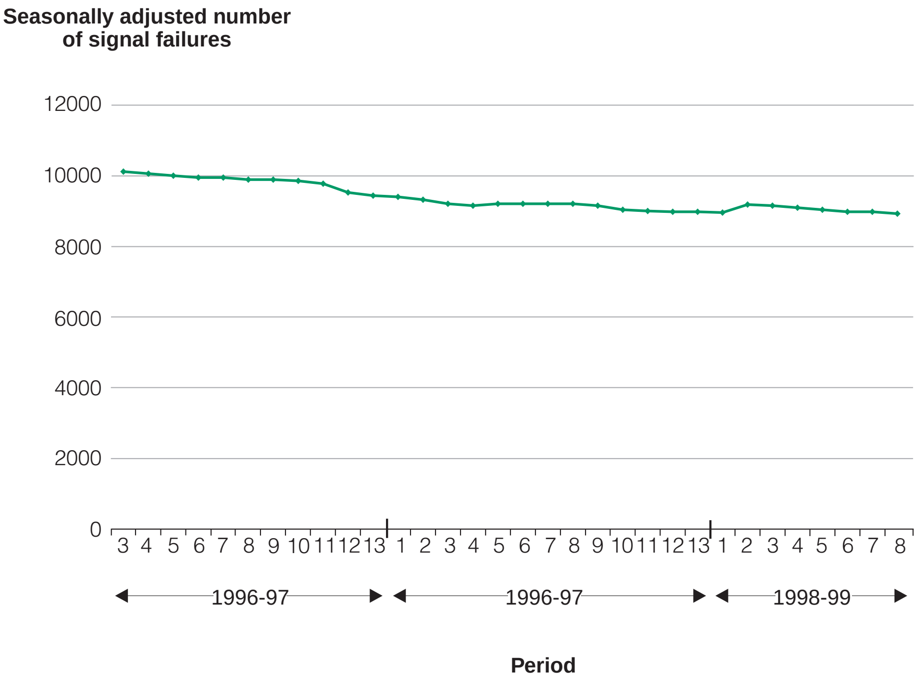
Railtrack have insufficient good quality information on the condition of their signalling equipment.

3.65 Our engineering consultants, Charles Haswell and Partners, consider that although maintaining signalling assets based on their condition may be commercial best practice, the process depends on the availability of detailed and accurate information on the condition of assets and the ability to assess the risk of impending failure. The ORR's consultants Booz-Allen and Hamilton were concerned, however, that Railtrack had insufficient good quality information on

Signalling failures 1996 to 1999

Figure 22

This figure shows how the rate of signalling failures has fallen between 1996 and 1999



Sources: National Audit Office analysis; Booz-Allen and Hamilton asset condition to enable the risks of signalling failures to be adequately assessed. There is also a risk that extending the life of existing signalling assets might delay improvements in performance available from replacing them with modern signalling systems, such as an increase in capacity on busy routes.

3.66 The Health and Safety Executive told us that they considered that, unless Railtrack had good information on the condition of their signalling, extending the life of signalling equipment could lead to an increased risk of delays and cancellations to trains due to equipment failing unexpectedly in service, and might affect safety. They said that they were not yet confident that Railtrack's information was sufficient for the purpose of allowing further extension of asset life.

The ORR have asked Railtrack to develop a new method of measuring the condition of their signalling equipment.

3.67 Because of the change in Railtrack's approach to the renewal of signalling, the ORR have asked Railtrack to develop a new method of measuring the condition of their signalling equipment. They have also proposed to amend Railtrack's network licence to require them to maintain a register of their assets and of the condition of these assets, including their signalling assets. In agreeing appropriate measures of asset condition with Railtrack, the ORR will need to take into account the change in Railtrack's approach to renewal, particularly with regard to:

- assessing whether Railtrack are maintaining the network in a satisfactory condition at a time when their change of approach is likely to produce an apparent increase in the average age of some types of asset;

- assessing whether Railtrack's information systems are good enough for them to avoid unexpected failures of assets in service.

Glossary of terms

Access charges	Payments to Railtrack by train operators for the right to use the network. Access charges are set by the ORR and are Railtrack's main source of income.
Asset maintenance plans	Plans prepared by Railtrack to estimate and plan the renewal expenditure required for major assets.
Authority	The Strategic Rail Authority (which currently exists in shadow form).
Booz-Allen and Hamilton	Consultants appointed by the ORR to report in 1999 on Railtrack's performance between 1995 and 2001.
Control period	The six year period ending 31 March 2001 for which the ORR set access charges.
Enhancement	The development of new or existing assets to improve the network's capacity or performance, for which no funding provision is made in current access charges.
Franchise	An arrangement where a private sector business is selected by the Franchising Director to own a train operating company for a period of years and is given the right and duty to operate that company's passenger rail services under a franchise agreement.
Franchisee	The private sector business awarded a franchise.
Franchising Director	The Director of Passenger Rail Franchising, who is the Chief Executive of the Shadow Strategic Rail Authority and was head of their predecessor, OPRAF. He is responsible for selecting franchisees, paying Government subsidy to them, and enforcing franchise agreements.
Health and Safety Executive	The statutory body which include Her Majesty's Railways Inspectorate and are responsible for accepting and enforcing Railtrack's railway safety case (the statement which sets out how the company will handle safety). The Executive also monitor Railtrack's acceptance and enforcement of the safety cases of passenger and freight train operators and station operators.
Licence(s)	The licences from the Secretary of State under the Railways Act 1993 which authorise Railtrack to operate railway assets. Railtrack have two licences: one for the network excluding stations and one for the stations that they operate.

Maintenance	Routine work to preserve the network's assets in a safe and fit condition between renewals.
Network	Rail assets in Great Britain owned and operated by Railtrack (such as track, structures, signalling, electrical equipment and the 14 major stations); also includes all other stations and maintenance depots which are owned by Railtrack but run by other operators.
Network Management Statement	An annual statement by Railtrack of their plans for the maintenance, renewal and enhancement of the network.
OPRAF	Office of Passenger Rail Franchising.
ORR	Office of the Rail Regulator.
Passenger Transport Executives	Statutory bodies which plan and fund certain passenger rail services in some metropolitan areas.
Performance regime	A contractual arrangement for payments from or to Railtrack and its main customers and suppliers, depending on their performance against set criteria.
Rail Regulator	The independent official appointed by the Secretary of State under section 1 of the Railways Act 1993.
Railtrack	The public limited company (Railtrack plc) that owns and operates the rail network.
Renewal	Non-routine work to repair or replace assets.
Secretary of State	The Secretary of State for the Environment, Transport and the Regions.
Shadow Strategic Rail Authority (SSRA)	The body formed in 1999 to take over the current rôles of OPRAF and the British Railways Board, pending enactment of the Transport Bill.
Station regeneration programme	Railtrack's programme of maintenance and renewals for completion by March 2001, intended to reverse the maintenance backlog and decline in condition at stations.

Strategic Rail Authority (SRA)	The body proposed in the Transport Bill to take over, with extra powers, the rôles of OPRAF and the British Railways Board, and certain consumer affairs and other functions of the ORR.
Structures	Level crossings, bridges, tunnels, viaducts, cuttings, embankments, retaining walls, culverts and sea defences.
Track	Rails, the supporting sleepers and ballast.
Train operating companies	The 25 companies that run domestic passenger rail services, which are each owned and operated by private sector franchisees.
Train operators	The train operating companies, Eurostar, and the operators of freight trains.

Appendix 1: Our study methods

Analysis of information from the ORR

- We collected and evaluated information from the ORR on their monitoring of Railtrack's plans, expenditure, performance, maintenance and renewal. This information included reports and consultation documents produced by the ORR (such as those on the modification of Railtrack's network licence and on their review of access charges) and reports supplied to them by Railtrack (such as the annual Network Management Statements and summaries of performance results).

- We studied the report produced for the ORR by Booz-Allen and Hamilton in April 1999 ("*Railtrack's performance in the control period 1995 to 2001*") and we met Booz-Allen and Hamilton to discuss issues arising from it.

- We reviewed comments received by the ORR from Railtrack, and others, on Booz-Allen and Hamilton's report.

- We reviewed comments received by the ORR from train operators, funders, and Rail Users' Consultative Committees on Railtrack's 1999 Network Management Statement.

- We examined the ORR's information on what Railtrack had done to ascertain their customers' reasonable requirements.

Structured interviews with key parties

- We interviewed key staff at the ORR.

- We interviewed representatives of Railtrack plc.

- We obtained information from representatives of:

- the Department of the Environment, Transport and the Regions
- the Shadow Strategic Rail Authority

on developments in Government policy for the railways, and funders' requirements from Railtrack's maintenance and renewal activities.

- We met representatives of the Central Rail Users' Consultative Committee to discuss issues from the perspective of railway passengers.
- On rail safety issues we consulted the Health and Safety Executive.
- We consulted with third parties, such as representatives of Railtrack's customers:
    - the Association of Train Operating Companies
    - three passenger train operating companies
    - a freight operator.

Comparison with other regulators

- We compared the ORR's practices and procedures against those followed by other regulators of privatised industries.

Expert advice

- We appointed Charles Haswell and Partners Limited, specialist consulting engineers, to advise us on technical issues, including:
    - methods of assessing asset condition
    - methods of estimating costs of maintenance and renewal
    - the likely effect of asset condition on service to the customer.

- We appointed Europe Economics, economic consultants, to advise us on:
    - economic incentives under the pricing and performance regimes which exist for Railtrack
    - methods of regulating investment in regulated industries.

Appendix 2: Timetable of key events in the railway industry since 1992

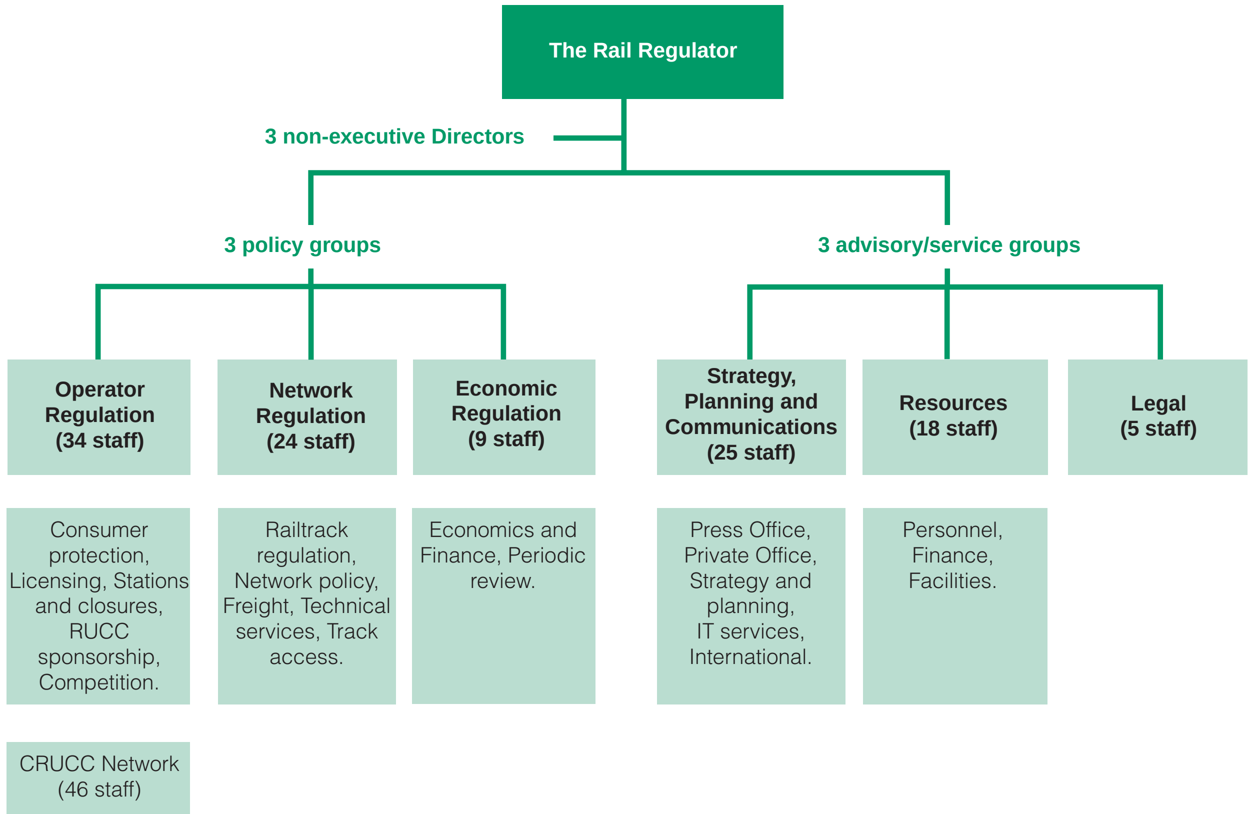
Date	**Event**
July 1992	White Paper, "*New Opportunities for the Railways*", proposes the restructuring and privatisation of the railway industry, including proposed regulatory framework.
November 1993	Railways Act 1993 enacted, given effect to White Paper proposals. Mr John Swift QC appointed Rail Regulator for a term of five years.
April 1994	British Rail's network, plus 11,000 employees, transferred to Railtrack.
January 1995	The ORR set the level of track access charges for April 1995 to March 2001.
December 1995	Railtrack issued their first Network Management Statement.
May 1996	Railtrack floated on the Stock Exchange.
December 1996	The requirement lapses for the Rail Regulator to take into account guidance from the Secretary of State.
February 1997	Railtrack issue 1997 Network Management Statement announcing proposals to spend £16 billion over the next 10 years on maintenance, renewal and enhancement of the network.
May 1997	The ORR announced proposals, agreed with Railtrack, to modify Railtrack's network licence to ensure delivery of the company's investment plans.
September 1997	The ORR modify Railtrack's network licence in accordance with their proposals.
December 1997	The ORR consult on proposed framework and key issues for reviewing track access charges for April 2001 to March 2006.
March 1998	Railtrack issue 1998 Network Management Statement including proposals to spend £17 billion over the next 10 years on maintenance, renewal and enhancement.

July 1998	The White Paper, "*A New Deal for Transport*", proposes the establishment of a Strategic Rail Authority, the setting up of an Infrastructure Investment Fund, two new government funding sources, and more scrutiny of Railtrack's investment programme.
	Following intervention by the ORR, Railtrack commit themselves to reducing delays for which they are responsible by 7.5 per cent in 1998-99, improving consultation with train operators, improving track quality and dealing with capacity bottlenecks.
September 1998	The ORR appoint Booz-Allen and Hamilton as consultants to review Railtrack's performance in the period 1995-2001.
November 1998	Mr John Swift QC's five-year term as Rail Regulator comes to an end. Mr Chris Bolt appointed Rail Regulator pending appointment of a permanent successor.
December 1998	The ORR publish a report on the financial framework for Railtrack's access charges for April 2001 to March 2006.
January 1999	Railtrack agreed to reduce delays for which they are responsible by 7.5 per cent in 1999-2000 and by smaller amounts in later years.
February 1999	The Deputy Prime Minister's Rail Summit secures agreement by companies in the industry to improve the quality of rail services.
March 1999	Railtrack publish 1999 Network Management Statement including proposals to spend £27 billion over the next 10 years on maintenance, renewal and enhancement.
	The Deputy Prime Minister appoints Mr Tom Winsor as Rail Regulator with effect from July 1999.
	Booz-Allen and Hamilton report to the ORR on Railtrack's performance for 1995-2001.
April 1999	Railtrack achieve actual reduction in delays for which they are responsible in 1998-99 of six per cent compared to 1997-98 – a reduction of two per cent for passenger trains and 16 per cent for freight trains.
October 1999	Fatal train accident at Ladbroke Grove, outside Paddington station.

November 1999	In response to Railtrack's failure to achieve their delay reduction target for passenger trains, the ORR make an enforcement order fining Railtrack if they do not reduce the delays they cause to passenger trains by 12.7 per cent in 1999-2000 compared to 1998-99. The fines amount to £4 million for each percentage point by which Railtrack fall short of this target. The ORR propose enforcement order requiring action by Railtrack with regard to their plans to improve the West Coast Main Line. They also announce their intention to amend Railtrack's licence to improve their stewardship of the network.
December 1999	The ORR publish provisional conclusions of their review of Railtrack's access charges for 2001-06. Final conclusions are planned for July 2000.
March 2000	Railtrack publish 2000 Network Management Statement.

Appendix 3: Organisational structure of the ORR

1 The ORR have three policy groups and three advisory/service groups. The Directors of the policy groups, plus the Director, Strategy, Planning and Communication and the three non-executive Directors, are members of the Board appointed by the Regulator to advise him. As at 13 January 2000 the ORR employed 162 staff. This included the Rail Regulator and 46 staff who worked in the Central Rail Users' Consultative Committee and the eight regional Rail Users' Consultative Committees.



Note: Organisation and staff numbers as at January 2000.

Appendix 4: How the ORR's monitoring of Railtrack has evolved

When Railtrack were established commercial and regulatory pressures provided incentives for them to maintain and renew the railway network

1 The regulatory regime established when Railtrack were set up provided two main sources of pressure for them to maintain and renew the network effectively:

a) commercial pressures from the contracts between Railtrack and train operators;

b) pressures from the ORR through their enforcement of Railtrack's network licence and their setting of access charges.

a) Railtrack's contracts with the train operators created commercial incentives to maintain and renew the network

2 Since 1995, each train operator has had a contract with Railtrack for their use of the network. The contracts set out in detail the services that the operator can run and the operator's rights to run additional services. Under the Railways Act 1993, the terms of the contracts must be approved by the ORR.

3 The contracts do not explicitly require Railtrack to maintain and renew the network, but they provide two commercial incentives for them to do so:

- The contracts oblige Railtrack to provide the railway capacity specified in each contract. Railtrack can only do this if they maintain and renew the network to at least the standard required to allow trains to operate safely over the specified routes. If Railtrack do not do so they jeopardise their income from train operators and they also risk being sued.

- The contracts incorporate a "performance regime" which rewards or penalises Railtrack and train operators according to the extent to which they are responsible for train delays and cancellations.

b) The ORR also provided incentives to maintain and renew the network

4 The ORR initially put pressure on Railtrack to maintain and renew the network in two ways:

- through their rôle in enforcing Railtrack's network licence;
- by setting the level of access charges.

Enforcing Railtrack's licence

5 When Railtrack were established in 1994, the licence granted to them by the Department of Transport to operate the network did not impose a specific obligation to maintain and renew the network. The only licence obligation relevant to maintenance and renewal was a requirement to publish an annual "Network Management Statement", detailing future capacity requirements and planned modifications to the network and the means by which these would be financed.

6 The network licence granted to Railtrack in 1994 had been designed for when the company was in public ownership. Accordingly, during 1995 the ORR considered whether the licence needed to be changed before the company's privatisation, which took place the following year. They concluded that for the most part it did not, but they identified a concern that the obligation on Railtrack to maintain and renew the assets of the railway might not be sufficiently effective. They therefore suggested to the Department of Transport that the licence should be amended to require Railtrack to produce a plan for maintaining and renewing their assets on a basis to be agreed with the ORR. The Department did not agree to the change, however, as they believed that the commercial pressures described above, together with the ORR's monitoring of Railtrack's performance and the ORR's setting of access charges, would be sufficient to ensure that Railtrack maintained and renewed the network to the standard required.

7 The monitoring carried out by the ORR was initially in three areas:

- examination and assessment of information provided every six months by Railtrack on delays, cancellations and the condition of track;
- analysis and review of the annual Network Management Statement;
- analysis of financial information in Railtrack's business plans and accounts.

Setting the level of access charges

8 In 1995, when the ORR set the access charges payable by train operators for the six years from 1995 to 2001, Railtrack did not have comprehensive information on the condition of the assets making up the network. The ORR therefore lacked a sound basis on which to assess future maintenance and renewal requirements. They were obliged to base the charges on the contracts that had already been agreed between Railtrack and maintenance contractors, and on the amounts charged in Railtrack's business plan for depreciation. They made clear to Railtrack, however, that the charges they had set were intended to allow Railtrack sufficient income to maintain the capability of the network and, where necessary, to carry out renewal in the form of modern equivalent assets.[17]

The ORR have strengthened incentives and monitoring

9 Since Railtrack's establishment and privatisation the ORR have developed the regulatory regime by:

a) strengthening Railtrack's obligations under their network licence;

b) requiring improvements to the form and content of Railtrack's annual Network Management Statement;

c) extending the scope and depth of the information provided by Railtrack on the condition and performance of the network;

d) obtaining commitments from Railtrack for performance improvements (see Part 2 of the Report).

17 Replacing old assets in the form of modern assets capable of doing at least the same job.

a) The ORR amended Railtrack's network licence to provide a clearer statement of their responsibility to maintain and renew the network

10 Following their review of Railtrack's 1997 Network Management Statement, the ORR considered that there was an urgent need to strengthen Railtrack's stewardship responsibilities. They noted that under their original network licence Railtrack had no obligation to maintain and renew their assets; nor were there any requirements laid down as to the adequacy of the Network Management Statement and Railtrack's obligation to deliver the work and achieve the objectives set out in it.

11 The ORR considered that the pressures exerted on Railtrack by means of their contracts with the train operators were not strong enough to compensate for these gaps in control. The contracts are not enforceable by the ORR; they are short-term (reflecting the short period of most operators' franchises); and they do not guarantee that renewal will be in modern equivalent form. Renewal to a lower standard might still enable services to be run in accordance with Railtrack's contracts with the train operators, but rail users and taxpayers would not be getting assets renewed to the standard for which they were paying. The ORR were also concerned that after privatisation Railtrack had not increased expenditure on maintenance and renewal as quickly as they had expected. Accordingly, in September 1997, following consultation with the rail industry and with Railtrack's agreement, the ORR amended Railtrack's network licence to include an explicit and enforceable obligation to maintain and renew the network (Figure 23).

12 The amended network licence now gives Railtrack a general duty to maintain, renew and develop the network. They have to do so in accordance with best practice and in a timely, economic and efficient manner so as to satisfy the reasonable requirements of train operators and of funders, such as the Franchising Director and the local Passenger Transport Executives.

The ORR's September 1997 amendment to Railtrack's network licence

Figure 23

The 1997 licence amendment agreed between the ORR and Railtrack has increased Railtrack's accountability for stewardship of the network.

Railtrack's 1994 licence
required them to publish an **annual statement** showing:
- projections of future network capacity requirements;
- planned modifications to the network;
- the method proposed for financing these, within its overall financial framework.

The ORR's 1997 licence amendment
replaced this with new requirements:
- Railtrack are under **a general duty** to maintain, renew and enhance the network, to the greatest extent reasonably practicable having regard to all relevant circumstances including Railtrack's ability to finance their licensed activities:
  - in accordance with best practice;
  - in a timely, economic and efficient manner;
  - to satisfy train operators' and funders' reasonable requirements for the quality and capability of the network;
- Railtrack must:
  - publish and keep under review their **criteria** for selecting and timing the work to be done;
  - publish an **annual statement**:
    - demonstrating how they expect to carry out their duty and satisfy their published criteria;
    - showing similar headings as previous Network Management Statements;
    - with additional detail showing the expected effect of their plans on the quality and capability of the network;
  - **consult** with train operators and funders;
  - produce a **reconciliation report** annually on their progress in delivering the planned works and achieving the planned aims of those works;
  - provide **information** to the ORR for monitoring Railtrack's compliance with these new licence provisions.

Source: The ORR

b) The ORR have obtained improvements in the form and content of Railtrack's Network Management Statement

13 Railtrack produced their first Network Management Statement in December 1995, when they were still in the public sector. Its form and the period it covered were determined by the Secretary of State for Transport. Following Railtrack's privatisation in 1996, the ORR assumed responsibility for the form and period of the statement. Having consulted Railtrack and their customers and funders they required Railtrack to add to the Statement their forecasts of demand and capacity and to say how they proposed to deal with any problems arising, including track bottlenecks. The ORR also required Railtrack to spell out their proposals for maintenance, renewal and enhancement and to show how these would be financed.

14 Railtrack have since produced three Network Management Statements on this basis. Review by the ORR, and subsequent discussions with Railtrack and their customers and funders, have led to successive improvements being introduced in the content and presentation of the Statement. The 1999 Statement illustrates these improvements (Figure 24). The ORR are also seeking further improvements in the 2000 and 2001 Statements in the information provided on the condition of the assets making up the network.

Figure 24

Information included in Railtrack's 1999 Network Management Statement

The licence amendment agreed between the ORR and Railtrack has increased the requirements for Railtrack's accountability for stewardship of the network.

Strategy

- Consultation processes and results.
- Railtrack's policies.
- 45 Route strategies.
- Congestion locations and possible solutions.

Expenditure

Ten year projections (analysed by zone) of expenditure on:

- maintenance;
- renewals (and rate of renewal by asset type);
- enhancements (by project).

Network Quality and Performance

Projections of changes (over 10 years unless stated otherwise) in:

- track quality;
- capability (maximum permitted speeds and axle weights, size of vehicles, length of route electrified and improved journey times, and number of train paths agreed per route);
- station facilities (accessibility, comfort, integrated transport, information, security) and condition;
- temporary speed restrictions and broken rails;
- overhead electric wire: exceedence against standard (1 year only);
- signals: repeat failures (1 year only);
- renewal activities (quantities of track, signals, structures renewed);
- delays per train movement (passengers and freight) and analysis of current causes of cancellations.

Freight

- Consultation processes and results.
- Funding and timing of works.
- Freight Routing Strategy (current and projected capacity).
- Scope for enhancements and new markets.

Source: Railtrack

c) The ORR have increased the scope and depth of the information provided by Railtrack on the condition and performance of the network

15 In addition to the improvements in the Network Management Statement, the ORR have secured a number of other improvements in the scope and depth of the information provided to them by Railtrack. These include publication of Railtrack's criteria for maintaining, renewing and developing the network, their plans for developing freight traffic on the railway, and reports on progress in refurbishing and repairing stations. Figure 25 summarises the information now provided, which covers Railtrack's plans, financial results and performance in support of rail services.

Key information currently provided to the ORR by Railtrack

Figure 25

The ORR receive a large volume of information for their monitoring of Railtrack

Information provided	Frequency
Plans	
Network Management Statement (includes 10 year projections of expenditure (national & regional) & performance (national))	Yearly
Business Plan	Ad hoc
Criteria for maintaining, renewing and developing the rail network (1998)	Ad hoc
Developing modern facilities at stations (1998)	Ad hoc
Track quality improvement plan (1999)	Ad hoc
Freight 10-point plan (1999)	Ad hoc
Customers' statements of reasonable requirements (1999)	Ad hoc
Financial Results	
Report and Accounts (including regulatory accounts)	Yearly
Half-year results	Yearly
Profit and loss, balance sheet, and cash flow: outturn against budget/forecast	Monthly
Asset-related expenditure (by region): outturn against budget	Monthly
Performance payments to/by Railtrack	Half-yearly
Performance and asset condition	
Station regeneration programme progress report	Yearly
Reconciliation Statement: report of progress against plans in the previous Network Management Statement	Yearly
Network Maintenance and Renewal Quality Indicators, showing:	Half-yearly
■ extent and capacity of the network	
■ track quality	
■ cancellations and delays due to maintenance and renewal causes	
Regional analyses of minutes delay due to maintenance and renewal causes	Half-yearly
Number of broken rails.	Monthly

Note: In addition to the above, Railtrack have given the ORR or their consultants extra information for their current review of Railtrack's access charges.

Source: National Audit Office analysis