

# **The Case for Rail**

## **Final Report**

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### **Prepared for:**

Transport 2000  
Association of Train Operating Companies (ATOC)  
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Railway Industry Association (RIA)  
The Railway Forum  
Rail Passengers' Council (RPC)  
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## 1. INTRODUCTION

### ***Background***

- 1.1 The passenger and freight growth targets for rail contained within the Government's 10 Year Plan<sup>1</sup> (+50% and +80% respectively) have been widely publicised and, at the time, were generally welcomed as an unprecedented statement of long term government commitment.
- 1.2 However, the 'consensus' around the policy direction of the Transport White Paper has receded, perhaps most clearly illustrated by the fuel rise protests in September 2000. Since then the railways have increasingly attracted adverse headlines with a sequence of events from the Hatfield crash in November 2000 culminating in Railtrack being placed in Administration in October 2001 amidst concerns over the backlog of maintenance and the rising cost of investment projects.
- 1.3 Against this background, various commentators have questioned the appropriateness of continuing to fund the network in its current form, let alone funding the expanded railway implied by the growth targets in the 10 Year Plan. And yet what is striking is the absence of debate on the benefits that rail brings. Both the 10 Year Plan (and its rail delivery element - the Strategic Plan from the Strategic Rail Authority<sup>2</sup>) provide little explanation on the benefits of rail growth. This may be due to their terms of reference - at the time the 10 Year Plan was produced there was a broad consensus on the direction of policy - rail was self-evidently a 'good thing.' As such the Plan only sought to assess the costs and benefits of incremental change to the existing rail network. It did not seek to address the more fundamental question of 'why is rail a good thing?'
- 1.4 Considering these circumstances, a group of stakeholders<sup>3</sup>, co-ordinated by the Transport 2000 Trust, felt that a fresh 'statement of case' was needed for rail. They appointed Steer Davies Gleave to assist them in preparing a document that aims:

*" to re-establish the case for rail services in general and for the funding and provision of sufficient resources to maintain and enhance rail services to achieve published Government policy objectives".*

### ***Study Approach***

- 1.5 In this report we have sought to identify the contribution that rail makes to wider policy and economic regimes, by which we mean:
- What benefits does the railway network bring?
  - What contribution does the railway make to the economy, our urban and rural communities and the sustainability of our way of life in Britain?

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<sup>1</sup> DETR 2000, Transport 2010: The 10 Year Plan

<sup>2</sup> Strategic Rail Authority 2002: The Strategic Plan

<sup>3</sup> Association of Train Operating Companies, English Welsh and Scottish Railways, Railway Industry Association, The Railway Forum, Rail Passengers' Council and Passenger Transport Executive Group.

- 1.6 Our premise is that the contribution that the national rail network makes lies in the uses to which it is put and the impact these uses have on the economy, the environment, our patterns of land use and the community in general. We have therefore organised this report around a consideration of the various uses to which the railway is put, looking at business and leisure travel, passenger and freight, alike.
- 1.7 We have also taken as a starting point that it is a fundamental aspiration that the economy should grow. In an increasingly competitive world, efficiency in business travel, commuting and freight is a vital component for this growth. This is well recognised. What is perhaps less well recognised is that economic growth also increases demand for other categories of transport – leisure and ‘discretionary’ travel – and that these uses can also have significant impacts on the economy and on the sustainability agenda. As has been argued many times before, accommodating this growth through the expansion of the road network cannot be considered a viable strategy for the future. It would result in massive failure in the delivery of environmental, land use planning and social inclusion policies. Rail should therefore be making a key contribution towards achieving the necessary policy balance.
- 1.8 The purpose of this report is to highlight the ways in which rail makes a contribution. Wherever possible we have attempted to attach values to it – recognising in some cases that there would need to be more in-depth research to make definitive statements on some of the issues, but believing that, on balance, there was more to be gained from attempting a quantification of the benefits than contenting ourselves with a qualitative assessment.
- 1.9 In order to assess and value these benefits we have in many cases to ask the question of what would happen if we didn’t have a rail network? This shouldn’t be taken to infer that we believe that this is a plausible scenario, but asking this hypothetical question enables us to make an assessment of the value of having a rail network in Britain, which as we noted above is something that was not attempted at the time of the 10 Year Plan.

### ***The Policy Background***

- 1.10 The Government’s 10 Year Plan and the Strategic Rail Authority’s Strategic Plan set out, respectively, the overall targets for rail growth, and the projects that are expected to be brought forward to deliver the targets. Both documents are seen as milestones in their own right – the 10 Year Plan because it sets out, for the first time, a long term funding commitment by government towards the railways - and the Strategic Plan for setting out a programme of priorities for spending this funding.
- 1.11 This expenditure is aimed at achieving the national policy aims for transport, which the Government has developed since the White Paper was published in 1998, with the broad aims of sustainability and integration.
- 1.12 These policies have been established through subsequent policy documents, guidance notes, and statutory provisions which reflect recent shifts in thinking, including:
- international concerns and the response of the European Union;

- development of the principle of subsidiarity<sup>4</sup>, which has given a greater role to regional and local bodies;
- affording a greater role for transport in spatial planning guidance; and
- the re-focusing of assessment methodologies to reflect the wider objectives for transport investment.

### *The Background to Current UK Transport Policy*

- 1.13 The last two decades have been marked by growing concern worldwide over the impact of human activities on climate and the atmosphere. This led to the UN Framework Convention on Climate Change, adopted in 1992. The Convention was given a focus for action by the Protocol adopted at the Kyoto summit in 1997. These high level agreements, albeit the subject of significant dissension and political bargaining, now set the broad direction for international and national policies to achieve sustainability in relevant areas, including transport.
- 1.14 The UN 1992 and 1997 agreements included both individual countries and (economic) groupings of countries. For the UK, as a member state of the European Union, EU policies set a clear direction. EU thinking on transport has evolved in parallel with world thinking on climate change.
- 1.15 In September 2001 the European Commission published a White Paper – ‘European transport policy for 2010: time to decide’ – which aimed to shift the balance between modes, eliminate bottlenecks and place users at the heart of transport policy, following concern over growing congestion and poor quality freight and passenger travel, especially on public services. Revitalizing the railways is considered to be an essential element of achieving these goals.
- 1.16 In the domestic arena, the Government established its overall transport policies in the White Paper published in July 1998. The aim of this new agenda was transport integration at a national level, to deliver major improvements to the environment, safety, access and social inclusion through building a transport system which “*will make it easier for people to choose different and sustainable ways of making their journeys*” (paragraph 2.48). A New Approach to Transport Appraisal (NATA) was introduced to ensure that investments were appraised against the Government’s five over-arching objectives of economy, environment, safety, accessibility and integration.
- 1.17 As a key component in this, the White Paper defined the need for an improved railway system. It identified investment to increase capacity as a prerequisite: “*The ability of the railway to cope with the increase in passenger demand that we wish to see will depend in part on the pace of infrastructure works ... [some operators] are constrained by infrastructure pinch-points that are already operating at or close to capacity.*” (paragraph 3.30). To ensure that a sound railway policy would be drawn up for implementation, the Government established a national Strategic Rail Authority (SRA).

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<sup>4</sup> i.e. that responsibility for action should be at the appropriate level

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*The Plan Over the Ten Years to 2010*

- 1.18 In July 2000, the Government published targets for the British railway system for the next ten years. These targets, if met, will substantially increase use of the system - passenger travel up by 50%, freight traffic up by 80%. A much higher quality of service is required to attract extra business on both networks.
- 1.19 With a promise of £64.7bn of investment over the next decade (detailed breakdown in Figure 1.1), the SRA set about formulating a plan to meet these targets and to meet its wider duties (as set out in the Transport Act 2000, paragraph 205), which are to:
- promote the use of the railway network for the carriage of passengers and goods;
  - secure the development of the railway network;
  - contribute to the development of an integrated system of transport of passengers and goods.
- 1.20 This requires the SRA to take a strategic view on the development of the national railway network. In January 2002, the SRA unveiled its 'Strategic Plan' of investment, which sets out in detail how the targets of the 10 Year Plan will be met. Accordingly, the Plan directs major investment where it is likely to be most effective in addressing the core targets: *'in terms of passenger volumes, this means focusing investment on the main routes serving London, both interurban and London commuters'*. For Regional Networks, public support is planned to *'maintain service levels rather than to develop new infrastructure'*.

### A Level Playing Field?

An issue that is often raised by commentators and researchers is that when scarce resources are being allocated, rail is rarely competing for these resources on a level playing field. Many of the arguments are well known and it is not our intention to make this a central theme of this report. Nevertheless, there are important issues here and we refer to them in shaded boxes, such as the one here, at various points throughout this document.

#### *A Level Playing Field in Appraisal? – Priorities within NATA*

*Economic efficiency is the dominant objective when project performance is being assessed against the five NATA objectives. This is borne out by research into the Trunk Roads Review (The UK Roads Review—a hedonic model of decision making, J Nellthorp, PJ Mackie; Transport Policy 7 (2000) 127–138) which indicates that economy and safety were much more significant drivers of decisions in that exercise than accessibility or integration. This is important because the five objectives differ in their typical treatment of schemes. For example, the accessibility objective, as currently defined, will naturally favour public transport schemes because both option values and access to the transport system are sub-objectives against which only public transport schemes can perform positively.*

*Imagine that two schemes are being compared which would both reduce the journey time between towns A and B by half an hour. The schemes have identical costs. One is a highway scheme, the other rail. At present, four times as many people make the trip by road as by rail. The transport economic efficiency sub-objective (which embodies classical welfare economic theory) would record a benefit-cost ratio for the highway scheme four times as great as that for rail.*

*In many respects this appears perfectly reasonable: if more people stand to derive benefit from an intervention for a given outlay, it is a more attractive proposition. This is only called into question if the status quo (an 80/20 split of movement) is considered undesirable, since the building of the road scheme would be likely to maintain the mode split and, quite possibly, promote its further polarisation. This tendency of classical welfare economic theory, to perpetuate the status quo, is probably its most important characteristic, but it is one which is often overlooked.*

*The following illustration may be helpful: cost-effectiveness analysis (as distinct from cost-benefit analysis) is a method of appraising projects on the basis of their achievement of stated objectives. If, for example, job creation is the aim, a project is appraised on the basis of its unit cost – the amount of money required to create one job. The approach is widely used in projects directed at regeneration (Department of the Environment, Transport and the Regions, The Government's Response to the SACTRA Report on "Transport and the Economy" §39, 2000).*

*The Government has set out a range of explicit aims relating to transport in its 1998 White Paper and subsequent policy documents. It would therefore be possible to carry out cost-effectiveness analysis of potential projects on the basis of their unit costs in delivering transport objectives such as reducing car dependence, improving personal choice and achieving sustainable mobility. It seems very unlikely that the highway scheme described above would appear so unambiguously preferable to the rail scheme if examined in this way.*

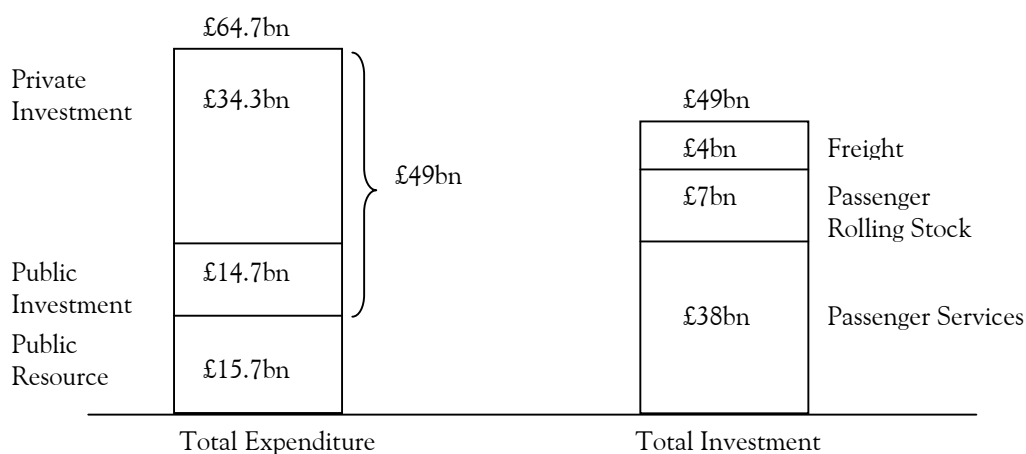
*The simple conclusion of this discussion is that the outcome of the transport economic efficiency aspect of appraisal may be in direct opposition to stated policy. Whilst the other objectives will no doubt make their contribution to a balanced decision, this may not overcome the potentially perverse performance of a scheme under this sub-objective.*

- 1.21 A combination of escalating costs on major projects such as the West Coast Main Line and the increased funding required by Railtrack following the Rail Regulator's review of charges



has meant that the level of public sector support has been increased from £29.1bn to £33.5bn. £7.5bn of this new total will be used to lever in additional private sector funding (£16bn in infrastructure and £7bn for new trains). The remaining £26bn will be used to sustain the rail network and deliver existing commitments: it will comprise grants for infrastructure provision, payments to franchisees and PTEs to maintain existing passenger services, and freight grants to sustain existing levels of output. This public sector funding is itself planned to lever in further private sector investment in infrastructure renewals and the completion of existing commitments that contribute to growth. The total amount of private sector investment leveraged by the Plan is expected to be very similar to that envisaged in the 10 Year Plan, but the precise level depends upon the progress of negotiations with the private sector and on building up investor confidence.

FIGURE 1.1: EXPENDITURE/ INVESTMENT WITHIN THE SRA'S STRATEGIC PLAN (JANUARY 2002) (not to scale)



- 1.22 There is a whole area of debate as to whether the private sector contributions that the Plan is premised upon can be achieved. Indeed it remains the subject of considerable debate as to whether the overall funding package is sufficient<sup>5</sup> to deliver the aspirations of the Strategic Plan, let alone anything more ambitious.
- 1.23 However, this is not the subject of this report. What we are interested in is not the fundability of the Strategic Plan (and the overarching multi-modal 10 Year Plan), but the *justification* for spending on the railways. Here it is important to recognise that, as we noted earlier, the 10 Year Plan only sought to assess the costs and benefits of incremental change to the existing rail network: it did not seek to ‘make the case’ for rail in the way that we aim to do so in this document.

<sup>5</sup> See, for example, Dr Rana Roy’s *A Plan for Growth? An analysis of the 10 Year Plan’s perspective for rail* (Railway Forum, March 2001, [www.railwayforum.com](http://www.railwayforum.com))

### ***Acknowledgements***

- 1.24 We would wish to acknowledge the assistance of all of the report sponsors - Transport 2000, the Association of Train Operating Companies, EWS, the Railway Industry Association, the Railway Forum, Rail Passengers' Council and the PTE Group - in providing reports and data, as well as their time to advise and comment on this document. We would also like to thank others, including the Strategic Rail Authority and the Rail Freight Group, who have also provided data and advice. The conclusions of the report are, of course, the responsibility of Steer Davies Gleave.

### ***The Structure of this Document***

- 1.25 In Chapter 2, we begin by looking at what the rail network is used for and identifying the key trends in its use. We then look at each of the uses in turn and seek to provide an assessment of their contribution and benefits, and hence the value of their use of the railway network. To this effect, Chapter 3 considers commuting travel, Chapter 4 looks at business travel, Chapter 5 at leisure uses such as tourism, and Chapter 6 at visiting friends and relatives. Chapter 7 considers freight use of the network. Chapter 8 brings the analysis of the individual markets together to provide an overall assessment and summarises our main findings.

## 2. WHAT IS THE RAIL NETWORK USED FOR?

2.1 The railways in Britain carry over 2.5m people and 400,000 tonnes of freight on 20,000 trains per day. They also employ over 130,000 people directly, and many more indirectly (see box overleaf). To set the context for our analysis by market sector, we provide an overview of who uses the rail network in Britain and what they use it for. We begin with passenger services.

### ***Rail Passengers***

2.2 Passengers travelled around 47 billion kilometres by rail in 2000. Table 2.1 shows, however, that this only gives rail an overall market share in the region of 7%.

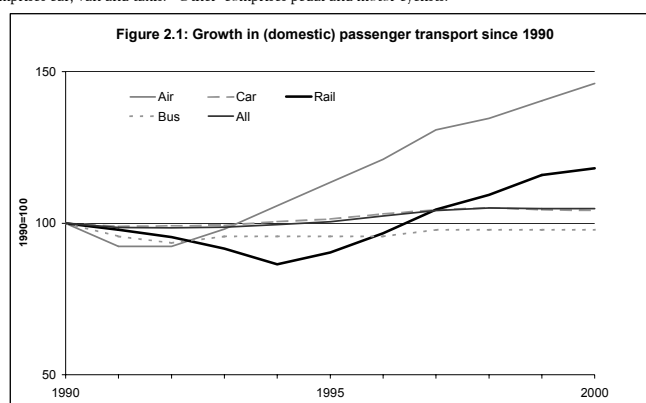
2.3 A common reaction to this statistic is that it shows that rail is an unimportant, relatively minor, mode. This would be incorrect. In markets where rail competes most effectively – city to city journeys, commuting to London and bulk freight movements – rail is a major mode, in some cases the dominant mode. Analysis of TransPennine travel in the 1990's<sup>6</sup> showed that for city centre to city centre traffic, rail was carrying 67% of the Manchester to Sheffield market, 56% of the equivalent Liverpool to Leeds traffic, and 71% of the Leeds to Newcastle market.

TABLE 2.1 MODAL SHARES FOR THE PASSENGER MARKET (2000)

	Billion passenger kms	% modal share
CAR	613	85
RAIL	47	7
BUS/COACH	45	6
AIR	7	1
OTHER	9	1
ALL MODES	721	100

Source: Transport Statistics Great Britain, 2000, Table 1.1. Note 'car' comprises car, van and taxis. 'Other' comprises pedal and motor cyclists.

2.4 Since privatisation of the railways in the mid 1990's, demand for rail travel has grown rapidly, growth that has been accelerated by the move out of economic recession (Figure 2.1). The number of passenger kilometres travelled by rail has been growing at around 5% per year. Trends in car travel have been broadly static over the last decade.



<sup>6</sup> TransPennine Rail Strategy, TPA 1990

- 2.5 This growth has been seen across all types of rail journey (long distance, commuting and leisure) and throughout the country. Tables 2.2 and 2.3 below use a broad grouping of passenger services based around the former British Rail sector groupings of Network South East (London and the South East), Regional Railways (the Regional Network) and Inter-City (the Strategic Routes) to begin to illustrate where, and for what purposes, the railways are used in Britain.

#### **The Rail Industry - A Major Industrial Sector**

*The British railway industry is a key industrial sector, employing around 130,000 people. The manufacturing and supply industry is particularly critical – providing skilled manufacturing jobs in the Midlands and North of England.*

*Research commissioned by Alstom in July 2000 analysed two recent contracts and indicates that there are wider implications for the economy of this manufacturing capability. The employment generated at Alstom plants from these two contracts was equivalent to 600 job years.*

*However, to this can be added the **indirect** impacts (the employment created in the firms supplying Alstom). These were estimated at 690 additional job years for firms involved in the first round of non-Alstom company suppliers and a further 990 job years in second and subsequent round suppliers (that is, the firms that supply the firms that supplied Alstom).*

*Furthermore, there would be **induced** effects related to the additional employment generated by those as a direct or indirect result of the Alstom project. These were estimated at a further 684 job years.*

*Thus the total impact of the projects was the creation of 2,964 job years - or almost 5 times the direct impact in Alstom's own plants.*

*Source: Alstom, Assessment of the Wider Effects of Major Overseas Projects - Public and Corporate Economic Consultants (PACEC) July 2000*

- 2.6 In terms of total passenger numbers, travel within London and the South East dominates rail use. Some commentators have used this fact to support their call for additional investment on the Greater London network<sup>7</sup>, whilst others have argued that investment should be directed towards other, less prosperous regions<sup>8</sup>.
- 2.7 The importance of the interurban network (the Strategic Routes) is highlighted in Table 2.2. Although the total number of trips (passengers) is lower than on either the Regional Network or London and the South East, the average journey length is much longer and thus the contribution of each traveller to the total number of passenger kilometres and revenue is much greater. As the 50% growth target set by the government in the 10 Year Plan, and adopted by the SRA in their Strategic Plan, is measured in terms of passenger kilometres, the importance of the Strategic Routes to achieving the Plan targets is clear.
- 2.8 A clear distinction can also be seen between each of the sector's contribution towards 'transport' targets, such as passenger volumes, and the financial targets that the train operators have. Regional services and those in London and the South East are used for shorter distance trips. Average revenues in both market areas are under £3 per passenger

<sup>7</sup> Come back, Dr Beeching, Economist, January 17<sup>th</sup> 2002 [www.economist.co.uk/world/europe/displayStory.cfm?Story\\_ID=940401](http://www.economist.co.uk/world/europe/displayStory.cfm?Story_ID=940401)

<sup>8</sup> Alfred Sherman, Centre for Policy Studies, *Stop rail subsidies: the majority pay for a rich elite to use this archaic form of travel* writing in the Guardian, January 18<sup>th</sup> 2002 [www.guardian.co.uk/Archive/Article/0,4273,4337904,00.html](http://www.guardian.co.uk/Archive/Article/0,4273,4337904,00.html)

compared to over £15 on the Strategic Routes. As a consequence, the Strategic Routes account for over one third of the network revenues from only 8% of the passengers.

**TABLE 2.2 RAIL USE – BY MARKET SECTOR (1998-99)**

	London and South East	Regional Network	Strategic Routes	ALL
Passengers (million pa)	588 (67%)	220 (25%)	67 (8%)	874* (100%)
Revenues (£m pa)	1,482 (48%)	514 (17%)	1,054 (35%)	3,050 (100%)
Passenger kms (billion pkms)	16.4 (46%)	7.2 (20%)	12.2 (34%)	35.8 (100%)
Average journey length (kms)	27.9	32.6	181.8	40.9
Revenue per passenger (£)	2.52	2.34	15.66	3.49

Source: Rail Industry Monitor 2000 – accounts only available for 1998-99. \*NB These passenger totals are 1998-99 figures, and so are smaller than the 2000 totals included in Table 2.3.

2.9 The same market groupings can be used to gain an understanding of what the rail network is being used for across the country in 2000 (Table 2.3).

**TABLE 2.3 JOURNEY PURPOSE (PASSENGERS PER YEAR, 2000)**

	London and South East	Regional Network	Strategic Routes	ALL
Commuting to work and education	352m (53%)	79m (34%)	7m (10%)	438m (46%)
Business and personal business travel	125m (19%)	36m (16%)	27m (38%)	188m (20%)
Leisure and tourism	109m (17%)	80m (35%)	19m (26%)	208m (22%)
Visiting friends & family	74m (11%)	34m (15%)	19m (26%)	127m (13%)
All	660m (100%)	229m (100%)	72m (100%)	961m (100%)

Source: National Passenger Survey: Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000 to Q3 2001. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

2.10 This indicates a number of important aspects:

- the high overall use of the rail network for ‘essential’ travel – business and commuting accounting for 66% of all rail use;
- the importance of the Strategic Routes network, in particular, for business travel – 38% of all trips on the Strategic Routes are for business and personal business purposes, and on some routes it is even higher<sup>9</sup>;

<sup>9</sup> Virgin Trains estimate the figure on their routes to be over 50%

- the role of the London and South East network for commuting - 53% of all these types of trips are made on the London and South East network.

2.11 In Table 2.4 the same information is looked at in terms of revenue. This shows the proportion of revenue for each of the market sectors that is derived from travel for commuting, business or leisure purposes. This indicates a number of important aspects:

- business travel contributes proportionately more revenue per passenger than leisure travel - reflecting longer trip lengths and higher business fares;
- however, commuting travel contributes proportionately less – a finding which is most pronounced in the Regional Networks (34% of trips but only 14% of revenue) where fares are set low by the Passenger Transport Executives (PTEs) in support of their transport objectives, and much less so in London and the South East where no such measures are in place.

TABLE 2.4 PERCENTAGE OF REVENUE BY JOURNEY PURPOSE 2000/1

Sector	London & South East	Regional Networks	Strategic Routes
Commuting	47	14	5
Business	24	42	51
Leisure/tourism &VFR	29	44	44
Total	100	100	100

Source: SRA ticket sales analysis, 2000-1, taken from SRA Strategic Plan 2002, p 58.

### ***Comparison with other Modes***

2.12 The National Travel Survey (Office of National Statistics) enables us to compare journey purposes by other modes of travel. The NPS data are not directly comparable with the SRA data, hence the different journey purpose percentages for rail shown in Table 2.5. Nevertheless, the overall figure of 65% of rail journeys being commuting or business travel is in fact very close to the 66% figure in Table 2.3, but the NTS suggests fewer business trips and more commuting than the SRA figures show to be the case.

2.13 Despite these differences, they reaffirm the extent to which rail is relied on for commuting and business travel. However, it is the comparison with car travel that is instructive: Broadly two-thirds of all rail travel is for essential, or non-discretionary, travel whilst only one-third of all car trips would be so defined.

**TABLE 2.5: JOURNEY PURPOSE BY DIFFERENT MODES (%)**

ESSENTIAL TRAVEL PURPOSES	RAIL	CAR
Commuting to work & education	54	21
Business and personal business travel	11	13

Source: National Travel Survey, 1997-99

***Freight Use of the Railways***

- 2.14 Of course the other major use to which the rail network is put is for transporting freight. Around 18 billion tonne kilometres of freight was carried by rail in 2000. Table 2.6 shows, that in a similar vein to the passenger network, rail has a relatively small share (between 7%<sup>10</sup> and 10%<sup>11</sup>) of its market - in this case the surface freight market.

**TABLE 2.6 MODAL SHARES FOR THE FREIGHT MARKET (1999)**

	Billion tonne kms	% modal share
ROAD	157	64
RAIL	18	7
WATER	59	24
PIPELINE	12	5
ALL MODES	246	100

Source: Transport Statistics Great Britain, 2001, Table 1.14.

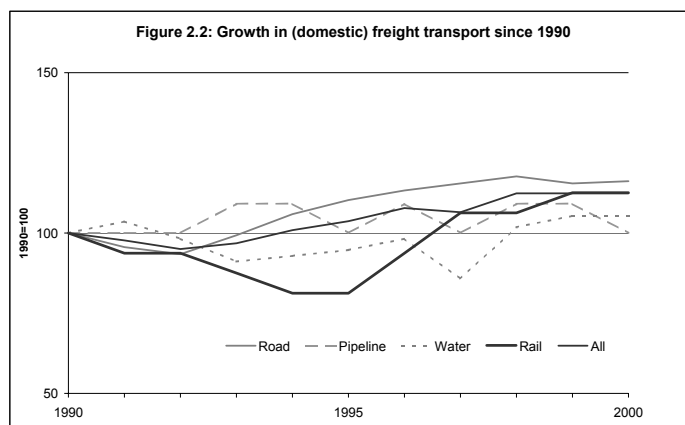
- 2.15 However, when we compare rail's share of the market for the movement of freight over longer distances, the picture changes significantly. Table 2.7 below shows the modal distribution by distance for all freight movements in all 17 countries within the European Union (Eur17).

**TABLE 2.7 DISTANCE CLASSES % (NATIONAL TRANSPORT - NATIONAL TRAFFIC ONLY)**

Km	Road		Rail		Inland Waterways		Total	
	tonnes	tkm	tonnes	tkm	tonnes	tkm	tonnes	tkm
0-49	59	12	28	3	31	5	57	11
50-149	25	24	26	12	35	22	25	23
150-499	15	44	36	50	30	54	16	44
500-	3	20	10	36	4	20	3	22
Total	100	100	100	100	100	100	100	100

Source: European Commission [http://europa.eu.int/comm/energy\\_transport/etif/transport\\_goods\\_a/distances.html](http://europa.eu.int/comm/energy_transport/etif/transport_goods_a/distances.html) NB some of the totals in the source data do not sum to 100%.<sup>10</sup> Transport Statistics for Great Britain 2001, Table 1.14<sup>11</sup> Getting goods on track, published by Freight on Rail, a partnership between transport trade unions, freight train operating companies, Railtrack, the Rail freight Group and Transport 2000.

2.16 After many years of decline, rail's modal share is growing and the number of tonne-kilometres carried is now increasing at 6% per year. Figure 2.2 shows that since the mid 1990s, rail freight has been growing at a faster rate than any other mode.



2.17 The types of materials that are carried by rail freight services illustrate the uses to which the network is put (Table 2.8). This highlights what has been a traditional feature of rail freight, the dominance of bulk haul activities, which account for one half of all gross tonne kilometres moved.

**TABLE 2.8: RAIL FREIGHT ACTIVITY BY COMMODITY (1999/2000)**

	Millions of gross-tonne kilometres	%
Coal/ metals/ construction/ oil & petroleum	22,086	49
Domestic Intermodal	9,783	22
International	2,311	5
Various (includes mail and components)	10,456	23
<b>Total</b>	<b>44,636</b>	<b>100</b>

Source: Network Management Statement for Great Britain, Railtrack 2000. Forecast activity for 1999/2000.

2.18 The rail freight market is not as easily segmented as the passenger market, but it is made up of four operating companies who generally deal in different sectors:

- English, Welsh and Scottish Railways (EWS) – who run the majority of freight services, including the majority of bulk haul movements and all of the Royal Mail and Channel Tunnel traffic;
- Freightliner Limited – who specialises in running high speed, domestic deep-sea container train services to inland terminals, but also has entered the bulk-haul business;
- Direct Rail Services (DRS) – a subsidiary of British Nuclear Fuels Limited, which operates all nuclear waste and associated trains to and from the Sellafield reprocessing plant in Cumbria, and has a small presence in the overnight logistics market;
- GB Railfreight – a recent, currently relatively small, entrant into the UK market.



### *Bulk Haul*

- 2.19 Of all types of traffic carried by rail, power station coal is still by far the most important in terms of tonnage and number of trains operated. Coal and coke accounts for almost half (48%) of the 92 million tonnes of freight carried in Great Britain in 2000<sup>12</sup>. The amount of coal transported is also increasing, growing by 8%<sup>13</sup> (gmtkm) between 1998/1999 and 1999/2000. This is largely due to the increased use of Scottish coal both from Scottish open cast sites and Scottish ports, which has led to an increase in the average distance that the coal is transported.
- 2.20 It is also the most volatile market, with power generators routinely changing not only the amount of coal they purchase, but also the source of this coal, which can vary from local pit to coal from the Continent<sup>14</sup>. Nevertheless the view of the Rail Freight Group is that the major markets for bulk loads - coal, steel and aggregates will continue to grow.

### *Container and Intermodal Traffic*

- 2.21 The majority of rail freight is of the type described above, where bulk freight is moved in 'conventional' wagons. This contrasts with 'intermodal' services, where the freight is first placed into an intermodal unit, such as a container. Containers are used primarily for deepsea shipment and are lifted between ships, trains and lorries.



Figure 2.3 Intermodal Freight Terminals (www.freightliner.co.uk)

Felixstowe, Southampton and Thameside are the major port terminals for intermodal transfer in the UK. The UK port traffic market is growing rapidly and rail services carry freight from Felixstowe to freight terminals across the country, as listed in Table 2.9.

As this market has grown, a network of intermodal terminals has developed throughout the UK and Ireland (Figure 2.3). In total, Freightliner transport over one million containers a year and operate over 100 trains daily.

- 2.22 The significance of Felixstowe and the movement of containerised rail freight in and out of the port lies in the length of haul that is being achieved, and as a consequence, the number of lorry miles removed from congested motorway routes. This is illustrated in Table 2.9, which shows rail freight movements out of Felixstowe for a typical week (in this particular example a week in January 2002).

<sup>12</sup> Transport Statistics for Great Britain 2001, Table 1.14

<sup>13</sup> Network Management Statement for Great Britain, Railtrack 2000

<sup>14</sup> Freightmaster: The National RailFreight Timetable No.24 January to March 2002

TABLE 2.9: RAIL FREIGHT: DISTRIBUTION OF IMPORTS AT FELIXSTOWE DOCKS

Destination	Trains per week	Wagons per week	Motorway routes avoided
NW England	35	512	M6/M56/M62
NE England	20	320	M1/A1
Central England	10	195	M6
Scotland	10	140	M6/M1/A1
Wales	5	80	M25/M4
SE England	5	40	M25
Total	85	1,287	-

Source: www.freightliner.co.uk

2.23 The importance of this can be illustrated with a simple example. With one rail container broadly equivalent to one lorry load then, if this pattern were replicated across the year, rail freight out of Felixstowe alone will save 67,000 lorry movements from the UK's road network per year.

### *Premium Freight*

2.24 Although the transportation of bulk products makes up the majority of freight transport, it is premium products delivered on a just-in-time basis which are often the most valuable, for example:

- components for production lines delivered on a just-in-time basis;
- mail and premium parcels;
- food distribution - with both Safeway and Asda entering the market in recent times.

2.25 EWS has been successful in re-entering the 'wagon load' market following the decision by BR to withdraw from it during the early 1990's. With changes in distribution methods and new regulations on working time that will increase costs for road hauliers, the market potential for rail in this sector is potentially very significant. The premium market is expected to grow rapidly with rail freight displacing some road freight traffic but also air freight in the mail and parcels sector. This is something we return to in Section 7.

### 3. COMMUTING TRAVEL

3.1 In the next five sections of this report we look in more detail at each of the main uses of the rail network and the benefits that arise from that use, beginning with passengers who commute to work or their place of education by rail.

#### ***Commuters to Work and Education***

3.2 Almost two million commuters<sup>15</sup> use the national rail network every day, the majority of whom travel on the network in London and the South East as shown in Table 3.1.

**TABLE 3.1 USE OF RAIL FOR COMMUTING TO WORK AND EDUCATION (PASSENGERS PA 2001)**

Sector	London & South East	Regional Networks	Strategic Routes	All
Commuting to work and education	352.1m	79.3m	6.6m	438m

Source: National Passenger Survey: Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000 to Q3 2001. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272.

3.3 Commuter traffic has grown rapidly in recent years. This has arisen through a combination of a strong economy and peak fares which have become relatively cheaper since January 1999 as the SRA has capped peak fare price increases at RPI-1%, whilst average earnings have been growing over this period at nearer RPI+2% per year.

3.4 There is significant variation around the country in the extent to which rail is used for commuting purposes, but the clear message is that where a more extensive network of services is available, use of rail is significantly higher. The relative reliance of commuters on rail, for different areas of Britain, is shown in Table 3.2. Despite having only 12% of the country's population, but with the country's densest urban network, London commuters make up half of all commuting trips by rail in Britain. The next largest network, Strathclyde, accounts for the second largest proportion. For the other major conurbations (principally the PTE areas), commuting trips by rail are more closely related to route length per person. At the other extreme, outside the conurbations, the rail network is sparser, population is more dispersed and the role of rail for commuting is smaller.

<sup>15</sup> 438m commuters in 2001 equates to 1.7m per working day. National Passenger Survey.

TABLE 3.2: GEOGRAPHICAL DISTRIBUTION OF COMMUTING TRAVEL

	% of population of Great Britain	Commuting mode share - car and rail/metro only	
		CAR	RAIL/Metro
LONDON	12	9	73
- Inner London	(5)	(3)	(65)
- Outer London	(8)	(6)	(8)
PTE AREAS	23	23	12
- England (6 areas ) <sup>16</sup>	(19)	(20)	(8)
- Scotland (Strathclyde)	(4)	(3)	(4)
REST OF ENGLAND	54	59	13
WALES	5	5	1
REST OF SCOTLAND	5	5	2
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Population (1998) Regional Trends 35, 2000 edition, Office of National Statistics. Modal share data (Autumn 2000) is from Table 1.7, Transport Statistics Great Britain, 2001, DTLR. Some totals do not sum to 100% due to rounding.

3.5 It is instructive to look at the role of rail commuting in the two cities with the highest proportion of rail use for commuting - London and Glasgow. Morning peak period mode shares estimates are shown in Table 3.3.

TABLE 3.3 TRIPS TO CENTRAL LONDON AND GLASGOW CITY CENTRE (MORNING PEAK -%)

	Central London	Glasgow City Centre
Rail and Underground	79	31
Bus	8	28
Car	13	41
Total	100	100

Sources: London: Transport Statistics 2001, Transport for London, [www.tfl.gov.uk/PDFfiles/stats2001.pdf](http://www.tfl.gov.uk/PDFfiles/stats2001.pdf) Glasgow: Malcolm Reed Director General of SPT - Conference Proceedings 'The Future of the Scottish Rail System' 27<sup>th</sup> February 2002.

3.6 Although the table shows that the modal shares of the two cities are quite different, what they have in common is that they are the only two cities in Britain where more people commute by rail than bus.

3.7 The very low proportion of people commuting by car into central London is a well known statistic, but the extent to which the rail network is used in Glasgow is perhaps more surprising and significant. The network in Strathclyde is large – 334 route miles and 180 stations – making it the biggest rail network outside London, and it carries around 43m passengers annually.

<sup>16</sup> West Yorkshire, South Yorkshire, Tyne and Wear, Greater Manchester, Merseyside, West Midlands

3.8 Through a sustained policy commitment to investment in services and the network in Strathclyde, Glasgow has achieved what the Director General of Strathclyde Passenger Transport (SPT) describes<sup>17</sup> as a ‘relatively benign’ balance between public and private transport. Although Strathclyde has 42% of Scotland’s population and 42% of GDP it has only 33% of Scotland’s road traffic (measured in vehicle kilometres).

3.9 However it is the contribution that rail makes towards allowing the city of Glasgow to function that is perhaps most significant. In the same speech the SPT Director General noted that:

*“... without the contribution of the rail network in dealing with peak commuting, Glasgow could not function as a major business centre within its present urban form. I think it is also fair to say that the costs of making alternative provision would be insupportable.”*

### ***Role of Rail Commuting in London***

3.10 If we turn to consider London where, as we noted above, more than double the proportion of people commute by rail and underground than in Glasgow, the significance of the rail network becomes apparent. Rail is crucial in the movement of the workforce into London and consequently has a major impact on the economy and on the patterns of land use development that arise.

3.11 The economy of London is highly complex. It has a significant impact on the performance of the national economy as well as on the other sub-regional economies in Britain. Its significance in national terms is perhaps best illustrated by the fact that the Central London Financial Services sector is the only part of the UK economy that is separately identified within the Euro zone economic convergence criteria.

3.12 London and the south east<sup>18</sup> is home to twenty one million people<sup>19</sup> and makes up 41 per cent of the UK economy<sup>20</sup>. The thirty years after World War II saw a policy of dispersal of business and population from London to the new and expanded towns beyond the Green Belt. Population fell from over 8 million in 1945 to 6.8m in 1983 before the policy of dispersal was abandoned amidst concerns that the capital was losing key skills and businesses. Since then globalisation has focused economic growth on capital cities around the world, amplified in the case of London by its role as one of the world’s leading financial centres.

<sup>17</sup> Malcolm Reed paper to a conference on the Future of Scotland’s Rail System, 27<sup>th</sup> February 2002

<sup>18</sup> including the East of England Government Office Region.

<sup>19</sup> Office of National Statistics, [www.statistics.gov.uk/popest\\_mid00.asp](http://www.statistics.gov.uk/popest_mid00.asp)

<sup>20</sup> 41% of UK GDP. Office of National Statistics, [www.statistics.gov.uk/pdfdir/rgdp0201.pdf](http://www.statistics.gov.uk/pdfdir/rgdp0201.pdf)

- 3.13 London now has a population of 7.4 million people and recent projections<sup>21</sup> indicate that this will increase by over 0.7m by 2016 - the equivalent of absorbing a city the size of Leeds over the next 15 years. This trend is already well underway - in the last two years the population has grown by more than 190,000 adding to the strain on existing infrastructure and services. Since 1995, the number of jobs in central London from outside the Inner London area increased by 76,000<sup>22</sup>. Projections to 2016<sup>23</sup> are for a further 400,000 additional jobs in business services in the capital. The Centre for Economic and Business Research (CEBR) (see Table 3.4), estimate that employment could increase by around 1 million from current levels.

**TABLE 3.4 EMPLOYMENT FORECASTS FOR LONDON (000)**

Employment Sector	1998	2016	2025
All	3,960	4,634	5,023
'City' (Financial and professional support)	324	391	457
'City' (Associated jobs –support and adjacent areas)	214	258	302

Source: Centre for Economic & Business Research (CEBR) Forecasts for SuperMetro September 2001

- 3.14 Railways have a unique role to play in London and the south east. Forty one per cent of peak period trips into central London are by rail<sup>24</sup>. When the Underground is taken into account, this figure rises to 79% (Table 3.3 earlier). The growth of London has only been possible because the rail network has been able to bring people in from an ever-increasing hinterland. However, as London's transport system reaches capacity and begins to overheat, future growth could be hindered.
- 3.15 The Mayor's spatial development strategy, *Towards the London Plan*, argues that London now faces only two strategic choices; to rein back economic growth, re-introducing or reinforcing dispersal with consequential implications on international economic competitiveness and for the Green Belt; or accept the processes of growth, re-centralisation and population increase in London. The GLA have adopted the latter, but have identified an urgent need for investment in transport infrastructure to facilitate this growth.

#### *The Financial Sector Cluster – Rail and International Competitiveness*

- 3.16 Table 3.4 illustrates the importance of the financial sector to London's economy. There is an identifiable job cluster effect with the largest growth sectors of financial and business services becoming ever more concentrated in the City. As a consequence the City now has the world's largest foreign exchange market, the largest international insurance market and more foreign banks than any other centre worldwide. The impacts of this financial 'cluster' are significant: Finance and business services in the City account for 40% of London's GDP and are estimated to generate £30bn net overseas earnings.

<sup>21</sup> Towards the London Plan, GLA 2002, [www.london.gov.uk](http://www.london.gov.uk)

<sup>22</sup> Annual Enquiry Employee Business Survey, Office of National Statistics

<sup>23</sup> GLA, see reference above

<sup>24</sup> Focus on London 2000, Office of National Statistics, Table 10.11.

- 3.17 London is therefore one of a handful of 'world cities' (competing with cities such as New York, Paris or Tokyo) and loss of this status would have major implications for the whole of the UK economy, not just London. London is also hugely reliant on rail to bring the workforce into the City. But numerous surveys have identified that within the international community, rail services in London are seen as unreliable and unpleasant and that the state of the rail network is having a seriously damaging impact on growth prospects<sup>25</sup>. Competition for all types of business investment is now global, and as communications is one of the main factors in location choice, the likelihood of rail services becoming more unreliable or overcrowded, or of consequential prolonged increases in road congestion, would undoubtedly make it less attractive than other locations, including other European capitals and major cities.

**City and Regional Competitiveness – developing rail in Paris & the Regions**

*A major feature supporting the growth of Paris as the national capital and a world class city has been the development over the last 30 years of the Réseau Express Régional (RER) system for the Ile-de-France. The concept was based on the first Paris regional strategy, published in 1965 but formally adopted only in 1976; its subsequent update, approved in 1994, incorporates further expansion of the RER system. The main work here has been construction of new tunnels across the city to link up former suburban lines, and construction of some new sections in the suburbs; total length of new construction is about 80 kilometres. To date five RER lines (some with two or three branches at each end) have been provided; a sixth is intended. In addition the existing lines have been modernised, and a substantial fleet of new trains provided, mostly double-deck (280 units in the 1990s alone).*

*Investment funding for the RER has come primarily from the Government, with some contributions from the City of Paris and the Ile-de-France Region and from SNCF / RFF. Government funding for public services is awarded largely through the mechanism of a 'contract plan' with each public authority or agency, over a 5 year period; most current contract plans are for the period 2000-2006. SNCF also receives substantial funds for revenue support of the Paris network from the authorities in the Ile-de-France.*

*Government similarly provides capital funds, under the contract plan process, to all the other Regions, largely for infrastructure works, of which transport forms a large part. The main projects are guided by regional planning strategies, which co-ordinate them with other facets of economic and development planning. Government also provides public funds to RFF, for network maintenance, renewal and investment. Furthermore, the Regions are now also responsible for current funding and development of rail passenger services, at present worked almost entirely by SNCF, following the 1996 Haenel report on regional rail services. Most of this funding also comes from Government at present. In consequence the Regions are funding an increasing amount of infrastructure and trains, as this creates a local railway network which better addresses their strategic aims, and which is more efficient to operate. These include major projects, such as total upgrading of main lines, which are now generally financed by a mix of funds from Government, the Regions, RFF and SNCF.*

- 3.18 The approach to maintaining its international position, adopted in Paris, has been to invest heavily in transport, and rail in particular. The scale of the task facing London can be illustrated with an example. If we start from the premise (identified in surveys of the

<sup>25</sup> Transport "consistently comes top in any poll of issues in the London business community. Overcrowding, delays and unreliability are a real economic drain on the Capital's economy." Alan Stevens, Chairman of CBI London, press release on 7 December, 1999 [www.cbi.org.uk](http://www.cbi.org.uk)

business community<sup>26</sup>) that relief of *existing* overcrowding of the London and South East rail network is something that needs to be urgently addressed as part of a strategy simply to maintain London's international attractiveness/competitiveness, then we can assess the implications by asking the following question - What additional capacity would be required if the current Passengers in Excess of Capacity (PIXC) standards were abolished? - i.e. if trains were not allowed to exceed their seating capacity. The box below shows this calculation. The key finding is that the additional capacity required simply to eliminate *excess* standing would be 30 extra 8-car trains, but that to eliminate *all* standing could require as many as 200 extra 8 car trains –costing around £1.3bn before we even consider the costs of increasing terminal and depot capacity that this would imply.

#### **PIXC (Passengers In Excess of Capacity) – The Background.**

*All train operators have a general obligation to avoid excessive overcrowding, but specific controls are applied to London commuter services by the SRA. For these the acceptable capacity of a train is taken as equal to the number of seats, except that for journeys of up to 20 minutes, the capacity includes passengers standing, up to a defined limit. On trains equipped with sliding doors, this is set at one passenger per 0.55m<sup>2</sup> of standing area (broadly equal to around 35% of seating capacity). For units with slam doors it is 10%.*

*Each TOC is required to carry out an annual survey to assess the total numbers. If the numbers across a service, or part of a service, exceed the acceptable capacity, then the excess is measured as a proportion of the total capacity. This measure is termed Passengers In Excess of Capacity – PIXC.*

*The PIXC figures must be interpreted with caution as they:*

- *result from counts at key points where highest passenger numbers occur, not necessarily the terminal stations;*
- *reflect a mix of train types, service patterns and passenger behaviour;*
- *differ between lines, reflecting demand by sector and the extent to which particular lines have received significant investment in recent years;*
- *change over the years according to demand and provision.*

*Nonetheless, the statistics form a useful basis for considering the policy implications of changing the standards.*

<sup>26</sup> Transport "consistently comes top in any poll of issues in the London business community. Overcrowding, delays and unreliability are a real economic drain on the Capital's economy." Alan Stevens, Chairman of CBI London, press release on 7 December, 1999 [www.cbi.org.uk](http://www.cbi.org.uk)



### **PIXC – Implications of Changing the Standard**

The following indicators are drawn from the results for 2000, taking journeys into London in the morning peak (which is more concentrated than the evening peak). They take the seating capacity of a typical modern 4-car unit as 280: thus an 8-car train, the typical size in the peak period, carries 560 people seated but has a capacity with permitted standing of about 750.

What extra resources would be needed to eliminate the PIXC excess? The TOCs' surveys for 2000 yielded a PIXC figure for all trains in the morning peak period of 5.1%. The total number of passengers carried was 466,900. This indicates a basic capacity of 444,200 places, with the PIXC excess representing 22,500 passengers.

**On this basis, to eliminate the PIXC excess standing passengers would in principle require 30 8-car trains. Their capital cost would amount to £250 million. On the approach to those terminals with significant excess numbers (London Bridge, Waterloo, Liverpool Street) track and signalling works would be needed to accommodate the extra services, and some extra depot space would be needed. They would also require extra traincrew and perhaps technicians for maintenance.**

If Government decided that no standing could be permitted, what extra resources would be needed to achieve this? Estimates put the total seating capacity of trains into London in the morning peak at about 355,000. This indicates the excess of passengers over seating (2000 figures) at 111,900 – about 32%.

**To eliminate all standing would in principle require 200 8-car trains. Their capital cost would amount to £1,300 million. Very substantial investment in capacity into London would be required, together with increased capacity at the terminals. Significant extra depot space would be required as well, perhaps equal to one or two new depots. These would call for major works and substantial land acquisition, perhaps amounting to several billions of pounds. It might be found that the extra capacity and efficiency yielded by the three proposed cross-London lines (Thameslink 2000, East-West Crossrail, NE-SW Crossrail) would actually provide for much of this. To operate and maintain the extra trains, there would need to be a substantial increase in the number of train crew, technicians and supervisory managers.**

### *Managing future growth – the value of the rail network to London*

3.19 Arguably the best way to assess what the value of the rail network is to the London economy is to ask what would happen in its absence. The occurrence of a national rail strike gives an approximation to what would happen in the short term. Responses include:

- taking leave;
- working from home;
- driving to work and / or on employers' business by car, often involving earlier or later journeys, thus spreading the peak;
- driving to work but in some form of car sharing / multiple occupancy of car;
- using bus /coach;
- walking to work or using a bicycle or motorcycle.

- 3.20 The recent round of strikes by rail employees provided the basis for an estimate of the cost to the national economy to be made. It is estimated that the British economy may have lost as much as £149m as a result of strikes carried out on South West Trains and Arriva Northern.

**TABLE 3.5 ESTIMATE OF THE COST TO THE ECONOMY OF RECENT TRAIN STRIKES**

	South West Trains	Arriva Northern
No. passenger journeys per day	390,000	62,877
Working time lost for each day of strike	160 years	51 years
Total cost to the economy of each day of strike	£20.5m	£6.6m
All out strikes to date/planned in current dispute	6	4
<b>Expected total cost of current dispute</b>	<b>£123m</b>	<b>£26m</b>

Calculations:- South West Trains: 4 days lost to strikes to date, with around 1 in 10 train services running. Each day, on average, 390,000 passenger journeys are made (based on figures from the SRA) = the equivalent of 195,000 journeys to and from work. With only 1 in 10 making it into work, 175,500 do not – each accounting for at least 8 working hours lost. This is a total of 1.4 million working hours, or 160 working years lost for every day of the strike. Source: <http://www.libdem.org.uk/index.cfm/page.homepage/section.home/article.2352>

- 3.21 However, the train strikes provide only a snapshot of the short term response to the sudden withdrawal of the rail network – and that response has typically been to avoid travelling on the day in question. This would clearly not be sustainable in the longer term and major changes in patterns of travel to work and on the location of employment and housing might be expected. As we noted earlier, the GLA have concluded that there are only two ways forward for London;
- accommodating growth through dispersal; or
  - providing the infrastructure to accommodate the global trend towards central cluster development.
- 3.22 While they have taken the decision to follow the latter it is possible to postulate a scenario whereby funding is insufficient to accommodate the expected growth in demand for commuting travel into London (Table 3.3 earlier) and service quality begins to decline as a consequence.

### **Implications of Deterioration in Rail Services in London - A Scenario**

*London is a major driver of the British economy. The City of London is one of the three primary world centres for international financial services. The central area also houses business management (many headquarters offices), legal services and public administration (especially Government). These employ broadly a million staff between them, a high proportion being highly skilled. Many of the 'back office' functions moved out of central London a decade ago. There are also major attractions in retail, arts, heritage and leisure services. In recent decades the proportion living further out from London has grown substantially, driven by demand to live in a 'rural' setting and enabled by the enhancement of railway services.*

*If the improvement of railway services now stagnates and turns into a gradual decline – continued unreliability, some reduction in service levels, poor quality trains and stations – skilled staff in London may become (relatively) more expensive and less effective. This could weaken the City's ability to compete in fierce world competition for financial services, and could result in their moving out, to Frankfurt or Paris. It will also affect the staffing of business HQs and public administration, especially Government. There will be less attraction in visiting the centre from outside for retail and leisure activities.*

*One likely consequence is that skilled workers now living around the edge of London will seek employment in services there, rather than move elsewhere or put up with worsening travel into London<sup>27</sup>. The M25 is already heavily congested, as are adjacent sections of radial routes, well beyond original traffic forecasts: in large part this reflects people choosing home–job links over routes which the M25 apparently made much quicker, generally with workplaces on the edge of London. Development of some major attractions around the M25 – e.g. the retail parks at the eastern Thames crossing – have added to regular traffic flows. Current planning principles mean that further major development is constrained, but this could be reversed. This could lead to the M25 becoming the focus for further dispersal of employment and activities out of London – “doughnut ring city”. Such a tendency would have a huge effect on lifestyles in the South East, greatly adding to travel by car in outer London and the areas beyond, while adding to decline of central London and undermining the potential regeneration of inner London.*

- 3.23 The result (as set out in the box above) would be that the capital enters a spiral of decline - overall commuting times increase as roads become more congested, there is a loss of international business as global capital moves elsewhere *and* there is dispersal of employment to the edges of the city. Both corporate and personal wealth could be expected to decline as a consequence.

<sup>27</sup> Evidence of this can be seen in a MSB survey reported by the BBC On-line 8<sup>th</sup> April 2002 which found that 1 in 3 of people who commute into London have considered changing their job in the last year to avoid train travel. [www.bbc.co.uk](http://www.bbc.co.uk)

3.24 These are clearly a complex set of interactions and the true impact is hard to assess. However a broad valuation of the first of these impacts can be made (Table 3.6). If the performance of the rail network declines, then the impact will be felt across all transport modes and journeys to work will become longer and more unreliable. The average daily commute time in London and the South East is just over an hour. With average speeds already down to 10mph throughout much of central London average commute times could increase significantly if even relatively small numbers of commuters left the rail network. By way of an example, if average commuting times were to double, the annual cost of the additional 7.6m hours spent by the 6.9m commuters in London and the South East would cost the economy approximately £9bn a year. Extending the same analysis to the other major conurbations (as represented by the PTE areas) would increase the cost to the economy to over £15bn per year.

**TABLE 3.6 IMPACT OF A DOUBLING IN COMMUTING TIME TO MAJOR CITIES (2000 PRICES AND VALUES)**

	London & South East	Regional Railways (PTE Areas)	Total/ average
people in employment (millions)	6.9	6.7	13.6
<b>Current scenario:</b>			
average commute <i>per day</i> (return trip) (mins)	66	48	57
total hours <i>per day</i> spent commuting (millions)	7.6	5.3	12.9
value of time spent commuting <i>per day</i> (£m)	34	25	59
value of time spent commuting <i>per year</i> (£bn)	8.9	6.5	15.5
<b>If commuting times doubled:</b>			
value of time spent commuting <i>per year</i> (£bn)	17.8	13.0	31.0

Source: Number in employment from Transport Statistics Great Britain, 2001 Tables 1.7; Average commute time from Transport Statistics Great Britain, 2001 Tables 1.8; Value of commuting time used is £4.52 per hour (1998 prices), taken from the DTLR's Transport Economic Note 2001.

### ***Commuting to other Major Cities***

3.25 The contribution of rail for commuting to some of the other major cities in England and Wales is also important, although in some cases for different reasons. Table 3.6 above illustrated the scale of benefit for the PTE areas using the same assumptions on what could happen to commuting times if rail services were to decline. While the assumptions used for London and the South East might appear too pessimistic for the scale of rail use in the regional network (Table 3.1 earlier) it is worth noting that various studies (see box overleaf) have shown that a significant proportion of rail commuters have access to a car for the journey that they are making and could therefore more easily switch away from rail with potentially major consequences for the highway network and, as we have pointed out for London, subsequently to the local economy.

### Car Ownership and Rail Commuting

The figures for public transport use amongst those who have unrestricted access to a car are instructive. In a 1990 GMPTE study, 32% of rail passengers did have a car available compared with 8% of bus users. 39% of rail passengers never had a car available, compared to 68% of bus users.

Various WYPTE surveys found a high level of car availability amongst rail users. The Selby Line Survey, undertaken for WYPTE in 2001, found that only 14% of users of Selby station did not have a car available for their journey. Selby has a large number of commuters who work in Leeds, a journey of some 25 miles, which made bus use unattractive.

3.26 A key feature of car commuting into many of our major regional cities is the use of the motorway network. Thus, the M6 around Birmingham, M8 in Glasgow, the M62 around Manchester and Leeds are all examples of the strategic national motorway network that are heavily congested by local commuting traffic for several hours each day. Forecasts from the Highways Agency indicate that this will get worse (see Table 3.7 and map of the M62 as an example).

TABLE 3.7: 2010 FORECAST AVERAGE TRAVEL TIMES ON TRANSPENNINE ROUTE

Route	All vehicles		
	2000	2010	Extra time
M6 to M1	1hr 31mins	1hr 55mins	24 mins
Manchester to Leeds	48 mins	1hr 2mins	14 mins
Liverpool to Manchester	31 mins	39 mins	8 mins
Leeds to Hull	1hr 7mins	1hr 11mins	4mins



Source: Highways Agency, M62 Route Management Strategy [www.m62route.co.uk](http://www.m62route.co.uk)

- 3.27 As we can see from the box on car ownership and rail use, many car users are already choosing rail in preference to driving into our regional cities and with future traffic congestion forecasts such as those shown in Table 3.7, the importance of the rail network as a means of potentially absorbing future growth pressures and facilitating economic growth is clear.

#### **CASE STUDY – LEEDS**

*Leeds is a good example of a city whose economy is dependent on rail. Leeds has the fastest growing economy in the country and Leeds station has seen a 40% growth in passenger numbers since 1997<sup>28</sup>.*

*Major investment initiatives such as the Airedale/Wharfedale scheme have been developed by the PTE to facilitate this growth. This integrated initiative has involved electrification of the route, new stations, customer facility enhancements and new rolling stock and has resulted in double digit growth on the route. A key outcome has been that it has facilitated the growth of the Airedale and Wharfedale corridors as key commuter corridors supplying the growing workforce that the Leeds economy has required.*

*This trend is set to continue, with 30,000 more jobs forecast between 1997 and 2007. However, the local labour force is only forecast to expand by 1,200 over the same period which indicates that if the economy is to continue to grow there will be a significant increase in commuting journeys to Leeds. With road congestion already a problem, many of these new trips will have to be by rail. The following capacity enhancements are underway in order to enable Leeds to grow:*

- three new stations on the recently electrified Airedale/Wharfedale line;*
- five new stations on the Wakefield line;*
- completion of the Leeds 1<sup>st</sup> capacity enhancements at Leeds City station;*
- plans for more long distance services, with Leeds-London services set to become half hourly by 2005.*

*The Leeds example shows that commuting-in is necessary to sustain the economy and that investment in the rail network is necessary to make this happen.*

#### **Commuting and Social Inclusion**

- 3.28 There was some debate in the 1970s which has been re-ignited recently by some commentators about whether it was equitable to put public funds into longer distance services and explicitly into railways. This particularly rested on the basis that such funding involved subsidy to longer distance commuters, from suburbs and satellite towns, at the expense of poorer inner suburban dwellers.

<sup>28</sup> West Yorkshire Passenger Transport Executive. Rail Passenger Partnership Scheme Formal Bid: Additional Class 333 Vehicles for MetroTrain Services. August 2001.

- 3.29 However, providing appropriate support to railway commuter services has, as we identified earlier, enabled city centre functions to continue benefiting from a wide choice of people to staff activities, thus ensuring the health of the city centre business. This in turn provides a stronger economy to provide jobs and support for all in the city.
- 3.30 However, the basic premise that rail commuting is the preserve of higher income groups, and that as such rail support payments are in effect subsidising the middle classes, is doubtful. These arguments tend to be supported by evidence on passenger miles: certainly, more affluent groups travel further, and hence seem to be a disproportionate user of rail.
- 3.31 However, equally, if not more important is the number of actual journeys undertaken. If this was used as the yardstick, rather than passenger miles, a rather different picture emerges. This is particularly so outside of London and the South East. Table 3.8 shows the breakdown of social class of commuters on the Regional Network expressed in terms of passenger journeys.

**TABLE 3.8 SOCIAL GROUP AND COMMUTING TO WORK AND EDUCATION – REGIONAL NETWORK - MILLION PASSENGERS PA 2001**

	Social group			ALL
	A & B	C1 & C2	D, E & other	
<b>Regional Networks</b>	<b>40.3 (51%)</b>	<b>29.6 (37%)</b>	<b>9.4 (12%)</b>	<b>79.3 (100%)</b>

Source: National Passenger Survey, SRA

Notes: A = Professional /Senior Management; B = Middle Management; C1 = Junior Management or full time students; C2 = skilled manual; D = unskilled manual or housewife/husband; E = unemployed; other = includes retired, no answer, don't know.

#### **Car Ownership and Social Inclusion**

*At the individual/household level, the choice/ability to commute by rail has significant secondary benefits, both to the household itself and transport outcomes. The provision of a satisfactory alternative (i.e. rail) may defer their decision to own a car. This is particularly the case for households already owning one car who may decide not to purchase a second. Unsurprisingly, car ownership is very strongly correlated with distance travelled by car, so it is likely in households where the decision is made not to purchase an additional car, large numbers of secondary trips - shopping, leisure etc. - are made by alternative modes. As well as the transport benefits this has in containing the overall number of car trips, it also offers households considerable financial savings, which is especially important in the booming economy of the south east where the high cost of living is severely impacting on the quality of life and the disposable incomes available to many households.*

- 3.32 In later sections of this report we return to the social inclusion agenda and it is clear that much of the rail support payment is going towards areas of the rail network where the services are used by a particularly balanced profile of income, age and gender. Most notably in the PTE areas and places such as the Cardiff Valleys.

#### **Commuting and Regeneration**

- 3.33 Social inclusion also often goes hand in hand with regeneration initiatives, and again rail plays a significant role. The Robin Hood line in Nottinghamshire is a good example – see box below.

### CASE STUDY – THE ROBIN HOOD LINE

The re-opening of the railway has played a critical part in strategies to improve the infrastructure of the Nottinghamshire / N. E. Derbyshire coalfield area. The 32 mile railway between Nottingham and Worksop cost £28 million to re-build, including some 30 miles of upgraded freight line, 2.5 miles of new track, and 12 new stations, with phased opening between 1993 and 1998. The project was developed by a consortium of local authorities, with key roles played by Railtrack and Central Trains. It was funded mainly by Government (£13.5 million), the European Union (£6 million), and the local authorities (£8 million).

The area had suffered a massive decline in mining and other traditional industries, resulting in reduced job opportunities, high unemployment and social difficulties. The number of mining jobs decreased from 41,000 in 1983, to under 3,000 in 1997. There was a 'unique concentration of concentrated joblessness, with no large companies, and no experience of small business, physical isolation, poor infrastructure and severe health problems'. The local authorities recognised the need for job creation, improving the attractiveness of the area as an investment location and as a place to live, and encouraging community involvement. Rail was seen as a key element in helping to achieve all these aims.

The railway is considered a great success, with passenger trips of nearly 1 million a year (1998 figures), and the line is one of the best performing on the Central Trains network.

As those involved in this project acknowledge, the link between improved accessibility to and within an area resulting from a major transport investment, and other factors that influence the area's development, is complex. But some interesting findings came from a survey of travel patterns on the line (before the final phase between Mansfield and Worksop was completed):

- 40% of all work trips were not made previously;
- 28% of all work trips were made by people who had changed jobs due to the railway;
- 35% of commuters using the line couldn't have made the journey by car;
- 7% of work journeys couldn't have been made by alternative means;
- 42% of work trips were made by people who ranked speed of journey as the most important reason for travelling by train;

Recent developments at the industrial park adjacent to Sutton Parkway station suggest that the improved transport infrastructure has contributed to inward investment in the area. Project partners see initial results as suggesting the railway is playing a key role in regeneration and the achievement of overall economic and social development objectives for the area.

### **Valuing the External Environmental and Safety Benefits of Commuter Travel by Rail**

- 3.34 We have identified a number of ways in which a partial measure of the economic value of the rail network for commuting can be made.
- 3.35 A further method - which has the virtue that it can also be applied across other uses of the network - is to assess the value of the benefits that arise in other sectors, such as road congestion and accidents avoided and environmental pollution avoided.



### *An Approach to Estimating External Benefits*

3.36 Recent Europe-wide research<sup>29</sup> provides a means of attaching valuations to the external costs of travel by different modes. From this it is possible to make an assessment of the value of all of the markets for rail travel by estimating the costs that would be incurred if there was no rail network. This is clearly a relatively simplistic measure since, as we have identified already, if there were no rail network, patterns of landuse and travel would be completely unlike those we see today. Nevertheless, it provides a useful indication of the scale of benefit the rail network brings for each of the markets, beginning here with commuter travel. Table 3.9 gives an overview of the external cost components, including road congestion, which were considered in the research project.

**TABLE 3.9: OVERVIEW OF EXTERNAL COSTS CONSIDERED**

Type of effect	Cost component
Congestion	External additional time and operating costs
Accidents	Medical care, economic production losses, suffering and grief
Noise	Damages (opportunity cost of land value) and human health
Air pollution	Damages (opportunity costs) of human health, material and biosphere
Climate change	Damages (opportunity costs) of global warming
Nature and landscape	Additional cost to repair damages, compensation costs
Urban effects	Time losses to pedestrians
Up-stream and down-stream processes	Additional environmental costs (air pollution, climate change and risks)

Source: INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000

3.37 Applying the figures on kilometres travelled on Britain's railways for commuting to the unit valuations derived from this research (see Table 3.10), we can derive an estimate of the value of the rail network by considering what would happen in its absence. For this purpose we have assumed that:

- all journeys considered as 'essential' (to work and on business) would still be made;
- 50% of passengers making 'non-essential' journeys would no longer travel of which;
  - 65% would switch to car;
  - 30% would switch to bus; and
  - 5% would switch to motorcycle.

**TABLE 3.10: AVERAGE EXTERNAL COSTS OF PASSENGER TRAVEL (1995 EURO)**

Euro/1000pkm	CAR		BUS		RAIL		AIR	
	UK	EUR17	UK	EUR17	UK	EUR17	UK	EUR17

<sup>29</sup> INFRAS (Consulting Group for Policy Analysis and Implementation, Zurich) and IWW (Universitaet Karlsruhe, [www.iww.uni-karlsruhe.de](http://www.iww.uni-karlsruhe.de)) External Costs of Transport. Accident, Environmental and Congestion Costs of Transport in Western Europe. March 2000. English version published by International Union of Railways (UIC), Paris 2000.

Accidents	33	36	5.4	3.1	0.9	0.9	0.6	0.6
Noise	6	5.7	2.4	1.3	1.7	3.9	2.0	3.6
Air pollution	19	17	36.0	20	13.9	4.9	0.6	1.6
Climate change	17	16	16.6	8.9	11.2	5.3	34	35
Nature and landscape	1	2.5	0.8	0.8	0.7	0.7	1.1	1.7
Urban effects	2	1.5	0.9	0.5	0.8	0.9	0.0	0.0
Up-stream/down-stream processes	9	8.6	8.0	4.3	7.5	3.8	4.7	5
<b>Congestion</b>	<b>7.9</b>	<b>5.8</b>	<b>5.5</b>	<b>3.8</b>	<b>n/a</b>	<b>N/a</b>	<b>n/a</b>	<b>n/a</b>

Source: INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000.

3.38 The estimates are shown below in Table 3.11 for current travel patterns and for a future scenario where rail travel had increased in line with the forecasts contained in the 10 Year Plan.

**TABLE 3.11 BENEFITS ARISING FROM COMMUTER RAIL TRAVEL (£M, 2000 PRICES)**

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Congestion	58	23
Accidents	290	118
Noise	45	18
Air Pollution	195	79
Climate Change	139	56
Nature & Landscape	8	3
Urban Effects	13	5
Upstream/downstream processes	71	29
<b>TOTAL</b>	<b>819</b>	<b>333</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

3.39 These estimates are considered to be conservative – for a number of reasons:

- they relate only to external, or non-user, benefits – i.e. the wider benefits to society. They do not include any estimate of the benefits that users of the railway get from using rail. Most transport project appraisals, particularly of road investment projects show that the user benefits comprise the major component of total benefit.
- secondly, the external benefits quantified in the research are only a partial reflection of the wider, but largely unquantifiable, benefits of the railway network that we describe in this report;
- thirdly, the 2010 forecasts for the rail Strategic Plan take the simplifying assumption that road traffic congestion does not worsen between now and then – thus increased congestion would increase the benefits arising from the Strategic Plan.

3.40 Notwithstanding these caveats, the benefits are significant. Table 3.10 shows that with current levels of commuting the rail network provides benefits of over £0.8bn per annum. If the Strategic Plan is delivered, these benefits would be worth a further £0.33bn in 2010.

## 4. BUSINESS TRAVEL

4.1 Alongside travel to work, travel in the course of business is the other major non-discretionary or 'essential' travel purpose for which the economy is heavily reliant on rail. Nearly 200 million business and personal business trips were made on the rail network in 2001 (Table 4.1).

**TABLE 4.1 USE OF RAIL FOR BUSINESS AND PERSONAL BUSINESS (MILLION PASSENGERS PA 2001)**

Sector	London & South East	Regional Networks	Strategic Routes	All
Business & personal business travel	125.1	35.8	27.5	188.4

Source: National Passenger Survey; Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000 to Q3 2001. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

4.2 Business travel is the principal journey purpose for users of the strategic network (Table 2.3 earlier) and on key routes such as the former inter-city services on the East Coast and the West Coast Main Line over half of all users are travelling on business for personal business reasons<sup>30</sup>. This contrasts strongly with the varied uses to which the road network is put – the National Travel Survey showing that only 13% of travel by road is for similar reasons.

### ***Sustaining Regional Economies***

4.3 In doing so rail makes a major contribution to sustaining the regional economies in Britain by enabling businesses in the regions to access each other, and also to access London. The inter-city rail network is focused on London, in much the same way that the motorway network is. However rail offers the key advantages to business travellers of:

- journey time (Leeds to London in 140 minutes on average, compared to 200 minutes by road);<sup>31</sup>
- direct city centre to city centre access;
- the opportunity to work en-route.

4.4 Improvements to inter-city rail links to London are important in facilitating economic development everywhere in the country. The emergence of Manchester, Leeds and Birmingham as important legal and financial centres has undoubtedly been facilitated by their rail connectivity, both in terms of the ability of key employees to commute into these centres (as discussed in the previous chapter) but even more so in terms of their rail access to London, and to each other. A review of the current regional economic strategies prepared by the Regional Assemblies and/or Regional Development Agencies around the country highlights the importance of rail in this respect. Indeed, an increasing reliance on rail transport is implicit in the growth and sustainable development ambitions of these RDAs.

<sup>30</sup> Source; Virgin Trains

<sup>31</sup> Source Winter 2001/2002 rail timetable (Leeds-London Pullman services) and Route Planner

**POLICY T8 from the Regional Transport Strategy for the SE Region**

*'A Regional Frame of strategic transport corridors will be developed in order to assist regional and inter-regional movement, reduce the present concentration of movement in the London area, and assist the regeneration of sub-regional priority areas. Priority for investment to improve movement within these corridors will be given to public transport.'*

Source: Regional Transport Strategy for the South East Region Consultation Draft – April 2002, [www.southeast-ra.gov.uk](http://www.southeast-ra.gov.uk)

*Responding to the publication of the SRA's Strategic Plan, the Chair of the Yorkshire and Humber Assembly said: "Rail transport is a national challenge and a major priority for Yorkshire and Humber. We welcome [the] announcement of the eventual funding for the east coast main line; however we need much more if we are to upgrade our rail network sufficiently to rebuild our economy and attract the critical inward investment we need."*

Source: Yorkshire Forward press release, 16th January 2002 [www.yorkshire-forward.com](http://www.yorkshire-forward.com)

- 4.5 The availability of a strategic rail network for business travel is therefore a key component of regional economic development strategy. The support of regional development bodies for enhanced rail is based on the UK experience of cities such as Leeds and Cardiff where the availability of fast regular rail services to London has been a key feature in supporting their economic growth over the last 10 years. It also reflects European experience – see boxes below.

**Regional Economic and Land Use Planning and Railways – French Experience**

*The national railway network in France has benefited from a generally consistent application of policy for the last thirty years or so, although this has followed a not always direct line of evolution. While France has tended to be strongly led from the centre, it has placed increasing importance over the last half century on the importance of maintaining its regions, together with the major cities in them, as foci for economic development. During the 1970s came the creation of the regional administrative bodies, followed in 1982 by the establishment of the Regions as elected bodies with a major responsibility for strategic planning, economic development, and transport. During this time the significance of Paris, as the heart of the nation, remained unchallenged, and the creation of the Ile-de-France ("greater Paris") Region in 1982 reflected this.*

*This focus on regional economies and politics has had a strong influence on Government decisions on development of the national railway system. One major result has been the world famous system of Trains a Grande Vitesse (TGV). A major element in the justification of the original Paris – Lyon line and subsequent network development is the positive support that the fast rail links offer to the economies of the main regional cities, through providing rapid direct access between them and Paris and between each other. These benefits have been effectively captured in several main cities by concentrating major commercial and other development around the city's main TGV station, which has also become a key focal point for the local and regional public transport system (especially rail and light rail). This approach reflects France's long experience of developing public utilities especially transport, to meet wider economic objectives, as shown by their early contributions to evolving techniques for assessing the wider economic effects of investment in communications.*

- 4.6 The benefits of regional rail links to the London economy work in two ways – both in sustaining the regional economies themselves and ensuring a more even spread of the benefits of economic growth, but also by releasing some of the over-heating pressures that the London economy puts on land development, the Green Belt, labour markets and transport infrastructure in the capital. This in turn has environmental and quality of life impacts for both the regions and for London itself. Again, this has been well recognised in other European countries such as the Netherlands (see box below).

#### ***Spatial Planning and the Role of Rail – The Dutch Experience***

*Concern over the environment and quality of life have formed a major focus for the Netherlands for much of its history, reflecting its fragile position across the low-lying Rhine delta and its relatively small land mass. Strong development planning has played a part in making the most effective use of land space to provide a strong economy and good social conditions. This applies to the whole country but the principles and practice are particularly important for the major cities of the capital region (the Randstad, “round city” - now to be called the “Delta Metropolis”). During recent decades there has been growing demand for larger houses, bringing pressure to develop outside the existing compact cities. In response the Dutch Government approved in 1988 an updated national spatial planning strategy, the Fourth Report on Physical Planning. This focused attention on achieving environmental goals. A supplementary policy report issued in 1993, the Fourth Report Extra (VINEX), expanded on mechanisms, including the key role of transport arteries between the cities and transport policy within the cities. It required new development to be focussed near city centres and around public transport nodes (especially rail).*

*VINEX linked directly into the new national transport plan (Second Transport Structure Plan, SVV2), approved by the Dutch Government in 1990. SVV2 aimed at maintaining mobility, for both economic and social reasons, while encouraging a major shift in modal choice, to reduce congestion and pollution from motorised travel. It incorporated inter alia a clear plan for railway investment to greatly expand passenger services, especially in the Randstad. This plan expanded on an existing investment programme of Dutch Railways (NS) called ProRail: NS subsequently developed it on more specific lines as its investment plan ‘RAIL’21’, whose aims included doubling the level of passenger trains on most lines, and improving comfort and quality of service. SVV2 is being succeeded by a new National Traffic & Transport Plan (NVVP), which moves away from seeking mobility constraints but which places even more emphasis on investing in infrastructure, especially for rail and light rail.*

*The RAIL’21 plan has formed the basis of major infrastructure investment, which is still progressing. It primarily encompasses capacity increases in the Randstad, through quadrupling existing two-track sections, and building flyovers at many junctions. Major works are also planned for other part of the network, with provision of new stations. The investment is funded by the government’s national infrastructure investment fund, established in 1994. The railway infrastructure is now vested in RailNed, which is responsible for management, maintenance and renewal. Its costs are largely met by Government, with operating companies meeting a proportion.*

*Operation of the core network of passenger services remains largely with the national operator NS. Operation of the secondary lines is being franchised out to local passenger transport companies. Initially the government is doing this, but responsibility is passing to the transport authorities (provinces or city transport regions).*

### ***Regional Hubs – The Cluster Effect***

- 4.7 Good rail transport is a key factor in making regional cities work. It is clear that over the long term, and at the macro level, the economy could not function without rail infrastructure and that a serious lack of such infrastructure will have implications for at least the location of economic activity, and potentially the level of activity and hence GDP.
- 4.8 At this macro level, transport is best seen as an ‘enabler’ within the economic system, in that it enables locations to be optimised and for transactions to take place at minimum cost between these optimised locations. The better the system – other things being equal – the further the process of optimising locations can be taken and the lower the costs of interaction between locations. This can perhaps be best illustrated by considering the growth of some of the regional cities in Britain that have been characterised by the clustering of key businesses and skills in a few sectors that drive the economy.
- 4.9 The regional economic hubs such as Birmingham and Leeds have exhibited the characteristic benefits of the cluster effect in sectors such as the legal profession and with geographic proximity increasing the flow of ideas, commercial rivalry, encouraging the development of a large skilled workforce etc. This creates a momentum that can power other sectors of the economy through the multiplier effect of increased spending.
- 4.10 These regional city sectoral clusters are having major impacts on both the national economy and their traditional hinterland. Taking the example of the legal practices again we see that:
- these firms are increasingly able to operate on a national basis from a regional base;
  - they are switching the balance of provision of these services away from a diffusion of small firms operating in the hinterland of the regional cities to the larger firms in the cities themselves.
- 4.11 These trends have implications for stemming some of the migration of the workforce to the South East and on the economy at both a national level, taking the heat off London and the dispersal of wealth into the regions, and within the regions themselves. But to function effectively they are highly reliant on fast and reliable strategic rail services that enable key people to travel city centre to city centre to clients and to/from London and other regional cities.

### ***Direct City Centre Access and Faster Journey Times***

- 4.12 In most cases the rail network delivers business travellers directly into the city centre. There is a journey time benefit from this compared to road and this has direct economic consequences - longer journey times mean less productivity of labour and equipment and therefore potentially a negative impact on GDP. In summary, more labour would be required to achieve the same level of output. The benefits that confers upon businesses whose employees travel to destinations in the city centre, or start their journey from a city centre location are self-evident and reflected in the market shares that rail can achieve for city centre to city centre travel.
- 4.13 According to surveys carried out as part of the TransPennine rail study in 1990, rail carried 67% of the Manchester to Sheffield city centre to city centre market, 56% of the equivalent Liverpool to Leeds traffic, and 71% of the Leeds to Newcastle market as shown in Table 4.2.

**TABLE 4.2 CITY CENTRE TO CITY CENTRE RAIL SHARES (TRANSPENNINE RAIL STUDY 1992)**

City Centre to City Centre	Estimated Modal Share (%)
Liverpool and Leeds	56
Liverpool and York	82
Liverpool and Newcastle	71
Liverpool and Hull	36
Liverpool and Sheffield	73
Manchester and Leeds	40
Manchester and York	78
Manchester and Newcastle	55
Manchester and Hull	45
Manchester and Sheffield	67

Source: Trans-Pennine Rail Strategy Study, Transport Planning Associates, January 1992

- 4.14 However, in addition to facilitating business links between the cities concerned, the feature of direct access to the city centre provides benefits in the form of relief to the road networks and a reduced requirement for the use of valuable city centre land for car parking.

### ***Facilitating Business during Travelling Time***

- 4.15 A key advantage of rail is that it is possible to work whilst travelling – something that is generally not possible if travelling by car. There is a direct benefit to the economy of using travelling time productively – although as we note in the box below, this is not normally recognised when road and rail projects are being appraised.



### **A Level Playing Field in Appraisal? – Valuing Work Time**

*Much travel takes place within working hours and appraisal practice has evolved to apply different values of time to such travel compared with personal trips. This sophistication does not extend to an appreciation of the usefulness of that travel time, in particular, that it is normally possible to work during a train journey but not possible during a journey by road. The cost function treats time spent travelling as time lost.*

*Suppose that the journey from A to B takes the same time by road as rail and that a group of business travellers switch from driving to taking the train. This will not be shown as a benefit in classical welfare economic terms but the individuals' employers will gain from the transfer in terms of time spent working. Similarly, if a choice is to be made between high speed rail and a motorway between two towns not directly connected at present, the rail option would be preferable from the employers' perspective, all other things being equal. Again, this would not be apparent from the cost-benefit analysis.*

- 4.16 A conservative calculation of the economic benefit that arises from being able to work whilst travelling by train, is shown in Table 4.3 below. Here, we have shown that if every rail business traveller on strategic routes undertakes one hour of productive work on each business journey – a not unreasonable assumption given that a typical rail journey from Newcastle to London will take 3 hours, Manchester to London 2 ½ hours and Cardiff to London 2 hours – then the value to the economy<sup>32</sup> of this work time would be £731m per year.

**TABLE 4.3 VALUE OF TIME SPENT WORKING WHILST TRAVELLING BY RAIL**

<b>Business Travel Only on Strategic Routes</b>		
Passenger Journeys	Million/year	23
Assumed time spent working	Hours per person	1.0
Total time spent working	Million hours/year	23
VOT for business travel	£/hour 2000 prices	31.78
<b>Value of business time</b>	<b>£m/year 2000 prices</b>	<b>731</b>

### ***Estimating the External Environmental and Safety Benefits of Business Travel by Rail.***

- 4.17 As for commuting travel (Table 3.10 earlier), we can provide a broad estimate of the value to the environment and society in general of travel by rail for business purposes, by applying the INFRAS research findings. As before this does **not** include any estimate of the benefit to users themselves, something which could be expected to increase the benefits substantially. Table 4.4 nevertheless shows that the current network, with current levels of business travel usage, provides external benefits of almost £0.6bn per annum. Looking forward we have, as noted in Chapter 3, used the highly conservative assumption that road congestion will not worsen between now and 2010 for the purposes of calculating the additional benefits arising

from the Strategic Plan. However, even with this assumption the benefits would be worth a further £0.24bn in 2010.

**TABLE 4.4 BENEFITS ARISING FROM BUSINESS RAIL TRAVEL (£M, 2000 PRICES)**

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Congestion	42	16
Accidents	208	85
Noise	33	13
Air Pollution	140	57
Climate Change	100	41
Nature & Landscape	5	2
Urban Effects	10	4
Upstream/downstream processes	51	21
<b>TOTAL</b>	<b>588</b>	<b>239</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

<sup>32</sup> Using DTLR appraisal values for working time.

## 5. TOURISM AND LEISURE TRAVEL

- 5.1 Tourism is one of the largest industries in the UK, worth approximately £75bn in 2000<sup>33</sup>. Despite the recent slow down in growth following a combination of the Foot and Mouth disease outbreak in Britain and the September 2001 terrorist attacks in the United States, the industry is expected to continue to boom in the medium term. Around 200m rail trips were made in 2001 for tourism, day trips or other leisure purposes. They account for 1 in 5 of all rail trips and over 1 in 3 of the trips made on the Regional Networks.

**TABLE 5.1 USE OF RAIL FOR HOLIDAY AND OTHER LEISURE<sup>34</sup> TRAVEL (PASSENGERS PA 2001)**

Sector	London & South East	Regional Networks	Strategic Routes	All
Holidays and other leisure travel	108.9	80.3	19.0	208

Source: National Passenger Survey: Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000 to Q3 2001. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

### ***Regional and Sectoral Economic Implications***

- 5.2 Although most of this travel would fall in to the category of ‘discretionary’ or non-essential travel this does not mean that it has no value. In strict GDP terms the impact of tourism and leisure travel output is primarily redistributive. By assumption, these trips are not productive – they are used to spend money which has been generated elsewhere, or at some other point in time in the case of retired people, and the role of the trip is therefore to dispose of that money. However, this redistribution - whether geographical or sectoral - has long been a policy objective associated with regional development and economic assistance for rural areas. Tourism expenditure generates added value in sectors, such as retailing, hotels, restaurants etc. and spatially, in rural economies.
- 5.3 Rail is particularly important because it is often the mode of choice of overseas visitors to Britain and these visitors have higher levels of spend than domestic visitors and, by definition, they are bringing money into the UK economy which might otherwise be spent elsewhere (an international competitiveness dimension).
- 5.4 The North American market is particularly important and Britain’s railways have successfully marketed specific products such as the BritRail Pass which are sold in North America with the result that when the visitor arrives in the UK they are already largely ‘captive’ to rail.

<sup>33</sup> United Kingdom Tourism Survey 2000, [www.staruk.org.uk](http://www.staruk.org.uk)

<sup>34</sup> Excluding Visiting Friend and Relatives

- 5.5 Again, the role of London is crucial. London is the main attractor of overseas visitors to the UK, and it is a key aspiration of the British Tourism Authority to seek to disperse this spending power to other areas of Britain (see box below).

**LONDON –the UK’s main tourist attraction**

*London’s tourism industry employs around 0.3m people and, in 2000, attracted over half of all the overseas tourists visiting England (13m out of 22m). However, it also attracts many more domestic visitors, 18.5m in 2000, who spent £3.1bn in and around the capital.*

*Train travel is used by almost a third (31%) of these domestic visitors to London, which is twice the national modal share. In 2000, £1bn was spent by these domestic visitors, whilst in the rest of the country, an additional £1.8bn was spent by domestic visitors travelling by train.*

*A prime ambition of national tourism agencies for many years has been to spread international tourism away from London’s hot spots. As tourism in the capital faces a capacity problem, this may be the only way to avoid losing potential value from the international tourism market.*

*While coach travel is a candidate means for accessing tourism sites away from London, in practice, tourism coach congestion in central London (where, of course, many of hotels are located) is such that this is not an attractive option. Rail is the better mode to support this policy objective and distribute across the country the benefits of international tourism spend.*

Source: London Tourist Board London Tourism Statistics, 1999; [www.staruk.org.uk](http://www.staruk.org.uk)

- 5.6 The importance of rail to the urban ‘city-break’ market is perhaps best illustrated by considering York (box below) where over a fifth of all visitors arrive by train –but as they represent most of the high spending visitors they contribute significantly more than a fifth of the value of this expenditure into the local economy.

**YORK – Railways and Tourism**

*York is a major rail hub, with all services using the East Coast Main Line, Trans-Pennine and the Scarborough branch line stopping at the City. It is one of the top ten town or city visitor destinations in the UK and 840,000 (21%) of all visitors in 2000 arrived by train. However, rail passengers make a contribution to York’s tourism economy that is greater than the simple 21% ratio suggests. An ‘above average’ proportion of the most valuable target groups arrive by train:*

*33% of overseas visitors (37% of American visitors, 33% of European visitors);*

*29% of those staying overnight;*

*24% of those in the AB social groups (but also 26% of DE as well);*

*32% of first time visitors and 16-24 year olds.*

*Given that the average spend per visit of an overseas visitor to Yorkshire is £282 (£259m over 0.918m trips), overseas tourists arriving in York by train are contributing approximately £78m to the local economy in 2000-1.*

Source: City of York Council, 2000-1 Visitor Survey, Q: Which method of transport did you use to get to York?

- 5.7 A similar pattern emerges in other historic towns that are rail connected. A survey<sup>35</sup> of tourists in Stratford upon Avon, which has relatively poor rail connections in comparison with York, nevertheless found the same pattern of an above average propensity of overseas visitors to travel by train, albeit on a lower overall base, reflecting the more limited rail service.
- 5.8 The survey found that 12% of overseas visitors arrived by train, compared to 1% of day trippers and 4% of UK tourists who were staying locally. With a total number of 0.58m overseas visitors, and an average spend per visit of £110, the rail network brought £7.7m of overseas income to Stratford in 1997.
- 5.9 What appears to be clear is that the number of tourists arriving by rail is directly related to the quality of the rail connection. Four million tourists a year visited each town. In Stratford, only 153,000<sup>36</sup> (4%) of *all* visitors arrived by rail, compared to York, where 840,000 (21%) of all visitors came by rail. Thus, it is clear that the greater role for rail for people visiting York is related to the fact that it has a good rail connection. York is served by all East Coast Main line trains and has at least an hourly service to and from London and Edinburgh. In contrast, Stratford has an irregular service from London, which at best, runs every two hours, and a local stopping service to Birmingham (which until recently had not been promoted as a tourism route).
- 5.10 However, the local authorities in the Stratford area, in conjunction with the Heart of England Tourism Board, have seen the potential role that rail can play in spreading the economic benefits of tourism into the rural hinterland surrounding historic towns and cities such as Stratford. They have recently embarked on a tourism strategy centred around the travel opportunities afforded by the North Warwickshire railway line (between Stratford in the south and Birmingham in the north),<sup>37</sup> the express aim of which is to increase the length of stay of visitors to the area by improving access to a wider range of activities available in the surrounding countryside.

### ***Tourism and the Role of Rail for the Rural Economy***

- 5.11 It is the rural economy which is often particularly reliant on tourism, and rail plays a number of important roles – bringing visitors to the countryside in a sustainable manner which doesn't have the adverse impact on the natural environment that car-based tourism does – and also providing a lifeline to local communities.

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<sup>35</sup> Source: Heart of England Tourist Board, tourism economic impact assessment 1996-7

<sup>36</sup> Source: Heart of England Tourist Board, tourism economic impact assessment 1996-7

<sup>37</sup> North Warwickshire Line Tourism Strategy –Steer Davies Gleave 1999

- 5.12 Policy aims to achieve more sustainable management of tourism impacts, in places such as the Peak District, Snowdonia and the North Yorkshire Moors, have led to various initiatives to develop rail access. The Matlock-Buxton rail proposals for the Peak District National Park, or the recently opened Welsh Highland Railway in Snowdonia, are examples, but the Settle and Carlisle railway in England (see box below) and the Highland Line in Scotland, are probably the best-known examples.
- 5.13 Much of this tourism is small-scale and low key, but collectively brings in significant amounts of additional income into rural economies that increasingly cannot survive on traditional activities alone.

#### *Railways and Rural Tourism*

Ruth Annison, of the Settle-Carlisle Business Liaison Group, made this point at a recent conference<sup>38</sup>:

*'There are no major hotels in the Settle-Carlisle corridor, yet the amount of visitor accommodation is very large if you aggregate all the bedrooms in pubs, guest houses, youth hostels, country hotels, holiday cottages and add the camping and caravan sites. Thousands and thousands of beds! Hundreds of thousands of 'bed nights' in the year! For example, in summer, the overnight population at the new caravan site in Hawes is as large as that of some of the surrounding villages – and overnight visitors only account for about half the people who use the countryside of the Settle-Carlisle corridor for recreation. All of these people are potential rail passengers, who may decide to book an extra night or make a return visit just to travel on the line. The availability and quality of travel information and the services themselves are critical factors in the economic regeneration of the area, as much as to the operator's fares revenue.*

*On a recent weekend, a couple who came to stay in Swaledale listed their expenditure. Arriving by rail on Saturday, they booked two nights dinner, bed and breakfast accommodation in a pub and then walked 10 miles, followed by an 18 mile walk on Sunday and 10 more miles on Monday before going home. They visited at least one shop, one café and two pubs each day, to buy picnic ingredients and newspapers, and to enjoy tea, coffee and toasted teacakes during their rest breaks. This relatively modest weekend's stay and shopping contributed £150 to the local economy'*

- 5.14 Tourism expenditure across Scotland is shown in Table 5.2 below and underlines the relatively greater economic significance of tourism in rural areas of Scotland. Indeed, in the more rural and remote parts of the Highlands and Islands, the impact of tourism is significantly higher than the average figure suggests. At the height of the tourist season, well over 30% of economic activity is directly related to tourism and, in areas such as Skye and Oban, this is estimated to rise to 40%.
- 5.15 One of the Scottish Tourist's Board's corporate objectives is to increase the spread of tourism expenditure. This can be justified on both economic and social grounds. The economic case

<sup>38</sup> Regeneration and the Railways (TR&IN Conference York October 2001)

is founded on the relative under-utilisation of capital in the remoter areas, i.e. it may be cheaper to persuade tourists to go to under-utilised hotels in Deeside than to build expensive new hotels in Edinburgh with the associated congestion costs. There is also a powerful social argument inasmuch as further depopulation of rural Scotland is undesirable and tourism is the most likely source of commercially viable jobs in such areas.

TABLE 5.2 TOURISM IN SCOTLAND

Area Tourist Board (1996)	Total tourism receipts (£m)	% of total	Tourism receipts per head of pop (£)
Highlands of Scotland	346	14%	1,661
Perthshire	121	5%	666
Argyll, the Isles, Loch Lomond, Stirling and Trossachs	264	11%	640
Edinburgh & Lothians	450	19%	589
Dumfries & Galloway	77	3%	521
Ayrshire & Arran	187	8%	496
Scottish Borders	46	2%	433
Aberdeen & Grampian	184	8%	345
Kingdom of Fife	88	4%	250
Angus & City of Dundee	63	3%	240
Greater Glasgow & Clyde Valley	353	15%	205
Scotland (including islands)	2,428	100%	473

Source: UKTS, IPS Regional Trends, [www.scotland.gov.uk/library/documents5/tb-r53.htm](http://www.scotland.gov.uk/library/documents5/tb-r53.htm). Note that the figures include receipts from resident population. The Scottish Office, Policy and Financial Management review of The Scottish Tourist Board [www.scotland.gov.uk/library/documents5/tb-00.htm](http://www.scotland.gov.uk/library/documents5/tb-00.htm)

- 5.16 Rural lines enable tourists to access more remote areas – and the view in the far north is that without the railway, international tourists would not travel as far as they do at present, and may not visit out-lying areas, such as the Highlands of Scotland. However, local people also view rural branch lines as lifelines, linking them to others and to job and shopping opportunities, in short, providing for social inclusion in rural areas. This is something we return to in the next section.

### **The Benefits of Rural Rail**

Rural rail can be said to have the following advantages:

- *Social inclusion: it can – and is – used by a mix of people, including people on low incomes, business travellers, people with disabilities. Most trains and stations on rural lines are accessible – those that aren't could easily (in most cases) be made so;*
- *Sustainability: rail offers a serious alternative to the car if quality is right. It can also be used (e.g. Far North Line, Conwy Valley) to carry freight, reducing the number of HGVs on rural roads;*
- *Local economy: Rail brings people into centres, encouraging use of market town shops, cafes, etc., and thus contributing to the health and vitality of town and village centres;*
- *Integration: rail can be at the heart of strategies for transport integration, with stations acting as hubs for connecting bus and taxi services, park and ride, and cycling. Stations can also develop as economic and cultural hubs, with complementary (and sustainable) development around the station area;*
- *Network benefits: the most remote rural railway forms part of a national, and indeed international rail network. The most remote community on the rail network has, in the vast majority of cases, only one change of train to make to get to their capital city (London, Edinburgh, Cardiff).*

Source: Paul Salveson of the Transport Research & Information Network (TR&IN) [www.platform8.demon.co.uk](http://www.platform8.demon.co.uk)

### **Peripherality**

5.17 The land use and economic peripherality debate that we have already discussed in the context of commuting and business travel is linked to the rural economy issue. Tourism receipts illustrate this. Total tourism receipts accounted for £235 per head of population in England in 1995<sup>39</sup>, but the figure was much higher for Wales (£383) and Scotland (£421) where the economies depend much more on this income. If there were no rural rail network, as some previously referenced commentators would advocate, there would be differential economic effects, with longer distance leisure and tourism destinations such as south west England and the north east of Scotland losing business.<sup>40</sup> These are the two most popular domestic holiday destinations accounting for 38% of all domestic holiday trips. Therefore there would be a spatial re-allocation of GDP away from peripheral areas to the areas of population concentration – with all that implies in terms of development pressures on Green Belts around urban areas.

<sup>39</sup> Source: UKTS, IPS, Tourism Intelligence Quarterly, [www.scotland.gov.uk/library/documents5/tb-t31.htm](http://www.scotland.gov.uk/library/documents5/tb-t31.htm). Note that the figures exclude receipts from resident population.

<sup>40</sup> 26% of all domestic holidays by UK citizens in 1998 were taken in the West Country, more than double the share of the next most popular region (Scotland 12%). Office of National Statistics.



***Estimating the External Environmental and Safety Benefits of Tourism and Leisure Travel by Rail.***

- 5.18 We can provide a partial estimate of the value to the environment and society in general of travel by rail for tourism and leisure purposes by applying the INFRAS research findings. Table 5.3 shows that the current levels of tourism and leisure travel usage by rail provide benefits of almost £0.3bn per annum. If the Strategic Plan is delivered the benefits would be worth a further £0.11bn in 2010.

**TABLE 5.3 BENEFITS ARISING FROM TRAVEL BY RAIL FOR TOURISM AND LEISURE PURPOSES (£M, 2000 PRICES)**

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Congestion	20	8
Accidents	101	35
Noise	16	6
Air Pollution	67	27
Climate Change	48	20
Nature & Landscape	3	1
Urban Effects	5	2
Upstream/downstream processes	25	10
<b>TOTAL</b>	<b>284</b>	<b>110</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

## 6. VISITING FRIENDS AND RELATIVES

- 6.1 One in eight of all rail trips is made for the purpose of visiting friends and relatives (VFR). This rises to 1 in 4 of trips made on the Strategic Routes and this market is expected to grow as more family members live apart. Already, according to an ONS survey, 55% of UK citizens in 1999 did not have a relative living within an hour's journey time<sup>41</sup>.

TABLE 6.1 USE OF RAIL FOR VISITING FRIENDS AND RELATIVES (PASSENGERS PA 2001)

Sector	London & South East	Regional Networks	Strategic Routes	All
Visiting friends and relatives	73.9	33.7	19.0	127

Source: National Passenger Survey; Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000 to Q3 2001. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

### *Visiting Friends and Relatives – Impact on the Economy*

- 6.2 Although such travel would not be classified as 'essential' in economic terms it would be wrong to assume that this travel purpose has little 'value.'
- 6.3 Birmingham is a good example – with a large number of visitors coming to the city to visit friends and relatives. A survey by the local Tourist Board <sup>42</sup>found that 877,000 people visited Birmingham for this reason, accounting for 44% of domestic tourists and 29% of overseas tourists. As a quarter of all tourists (504,000 visitors) came to Birmingham by train, it is likely that a large proportion of these who came to visit friends and relatives travelled by train. The total number of people visiting friends and family in Birmingham is likely to be even larger than these figures suggest, as this survey excludes people who do not stay overnight. Thus VFR travel is often a major component of tourism travel to our urban conurbations and bring many of the economic benefits. However, it is in terms of social inclusion where rail's contribution to the VFR market is most clearly seen.

### *Social Inclusion*

- 6.4 We noted earlier that some commentators who suggest that rail is the preserve of higher income groups base their contention on passenger miles: certainly, more affluent groups travel further, and hence seem to be a disproportionate user of rail (and air). However, equally if not more important, is the number of actual journeys undertaken. Table 6.2 uses this as the yardstick, rather than passenger miles, and a different picture emerges.

<sup>41</sup> 55% of GB citizens in Jan/Feb 1999 who live alone and are aged 20 and over do not have any relatives (including mother, father, eldest child or eldest grandchild) within an hours journey time. Source: Social Trends No. 31 2001 edition, Office of National Statistics, Table 2.2

<sup>42</sup> Source: Heart of England Tourist Board, tourism economic impact assessment 1996-7

TABLE 6.2 PROPORTION OF RAIL USERS NOT IN SOCIAL GROUPS A OR B (2001)

Sector	London & South East	Regional Networks	Strategic Routes	All
Commuting to work or education	36%	49%	32%	39%
Business and personal business	33%	43%	20%	33%
Holidays and leisure	64%	74%	69%	68%
Visiting friends and relatives	64%	69%	65%	65%
Total	43%	60%	40%	47%

Source: National Passenger Survey: Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000-1. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

Notes: A = Professional /Senior Management; B = Middle Management; C1 = Junior Management or full time students; C2 = skilled manual; D = unskilled manual or housewife/husband; E = unemployed; other = includes retired, no answer, don't know.

- 6.5 Several area- or line-based studies do show very clearly that use of local rail services is far more evenly spread across the social spectrum. A further issue to be borne in mind is that arguments that high levels of subsidy are being poured into rail to support the travel habits of the middle classes are misguided. Rail is certainly heavily supported by public money, but most of the funding goes into the local and regional networks which are precisely the lines which are used predominantly by lower income groups (Table 6.2 again), with a remarkably even gender balance.

#### **Social Stratification And Use Of Rail – The Research Evidence**

##### SOCIAL CLASS

*A Greater Manchester PTE 1990 study of transport usage found that rail had a reasonable percentage across all four main social categories. In the AB grade, rail had a 22% share of the rail market, with C1s over-represented at 35%, C2s at 22% and a drop to 19% amongst DEs. Social stratification in the bus market is much more marked. Whilst AB's counted for only 8% of the bus market, and C1s 17%, C2s made up 26% of bus users, and DEs counted for 48% - nearly half the users of bus services.*

##### GENDER

*It has been suggested that rail is used predominantly by men. Again, if the criteria was based on passenger-miles, men score higher because they travel further. The 1998 TR&IN study "What use are rural railways?" found that use of four rural lines in different parts of England was shared fairly evenly between men and women. Use of the East Suffolk Line between Ipswich and Lowestoft and the North Devon Line was exactly 50% each. In general, men tended to travel more during the week, with women predominating at weekends – reflecting traditional (but changing) gender roles in rural areas. In the case of the Robin Hood Line, serving a corridor which includes several low-income areas, rail use is actually higher amongst women – at 56%. The study commissioned by Greater Manchester PTE in 1990 found the gender profile of transport users showed men only slightly predominating over women as rail users: 53% compared with 47%. However, in the case of bus travel, 65% of passengers were female compared with only 35% males. Car drivers were 58% males and 42% females, whilst car passengers were 27% male and 73% female.*

##### AGE

*Are there significant differences in age in terms of rail use – and use of other forms of transport? The TR&IN study ‘What use are rural railways?’ found that young people were major users of rail, with under-18s accounting for 24% of users of the Exeter-Barnstaple Line. The 18-24 category accounted for 22%, with a drop of 17% for 25-34s, 14% of 35-44 range and 11% of 45-54. The 55 and over range accounted for only 11%. Again, there was variation between weekday and weekend use. Whilst under-18s only accounted for 9% of users during the week, the proportion shot up to just under 40% on Saturdays. Under 25s were again highly represented on the Derby – Matlock line, accounting for 37% of the line’s users overall.*

*The Hull-Scarborough study by TR&IN found that under-16s accounted for 10% of users, 16-25s 25%, 26-40 23%, 41-60 23% and over 60 18%.*

*Various West Yorkshire PTE studies found that use of rail services was reasonably balanced across age groups. The Garforth survey found that 16-25s accounted for 17% of users, 26-40 were 40%, 41-59 45% and over 65s 13%. Those in the 16-40 age bracket use the train more often (4.9 times a week) whereas those in the 60+ bracket use the train less often – about 2.5 times a week*

- 6.6 The inference of the (erroneous) claims that the majority of public money spent on rail is being used to support long distance middle class commuters is that poor people benefit from bus improvements but not rail improvements. This is, of course, contrary to the stated direction of Government policy and is in effect an argument for maintaining social exclusion. For the 27% in Britain who do not have access to a car, rail is the only realistic alternative for journeys over a few miles in length and as we have seen without rail services they would be excluded from contact with friends and relatives.
- 6.7 Thus the evidence suggests that rail is used by a broad mix of society – be it class, age or gender. There are variations across the country, and at times of day, but a key attribute of rail is that it is socially inclusive in a way that the car is not. This applies across all journey purposes including commuting to work where the social mix of rail travellers in the Cardiff Valley lines is quite different from some of the London commuter services. However, it is perhaps most apparent when looking at travel for the purpose of visiting friends and relatives.

### ***A Level Playing field for Appraisal? Social Inclusion***

*Approximately 30% of the UK population does not have ready access to a car. This reflects several factors, including the distribution of wealth and the number of individuals who are unable to drive.*

*When the speed or capacity of part of the highway network is increased, the principal beneficiaries are those that travel on it. In the first instance this will be the individuals and organisations that use the road for trips in their own vehicles. There may be a benefit to those that do not have access to a car but this is by no means assured. In the deregulated bus market, a service can only be guaranteed if the local authority in question tenders it. Highway schemes are rarely packaged with a guaranteed bus service (though it can happen). Taxi journeys will evidently be improved to the same degree as other motorised trips and this may result in a reduced overall cost for a given route but taxi is an expensive form of transport and therefore not typically available to lower income travellers.*

*Thus, the benefits of highway improvements are almost unavoidably restricted to the proportion of the community with access to a vehicle. Rail, in contrast, is in principle available to all members of the community. The network is getting closer to being fully accessible. The charge that it is a relatively expensive form of transport has some foundation but, as areas such as Merseyside and Greater Manchester demonstrate, high fares are not a necessary feature of rail travel.*

*With much emphasis placed on social inclusion, the Government has moved to include consideration of distribution and equity in scheme appraisal. Current guidance is not prescriptive about the classes of users that should be examined. Nor is it clear how the distribution of benefits would be interpreted. Rail's capacity to aid social inclusion should nonetheless stand in its favour.*

Source: Transport Statistics Great Britain 2001 Edition Table 3.14

### ***Travel by the Elderly***

- 6.8 Table 6.3 shows that the largest use of the rail network by retired persons is to visit friends and relatives. Many of these trips are taken in the off peak to take advantage of the cheaper tickets offered by operators and to avoid crowded trains. Those people most able to take advantage of off-peak travel are retired people. This market is very important to the rail industry because tapping into this market helps to fill seats on trains at quiet times of day. Although only 1 in every 6 long distance rail passengers are of retirement age, a large proportion (over a third) of them are travelling to visit family and friends.

TABLE 6.3 USE OF RAIL BY RETIRED PERSONS (PASSENGERS MILLION PA 2001)

Sector	London & South East	Regional Networks	Strategic Routes	All
Commuting to work or education	5.3	1.9	0.1	7.4
Business and personal business	13.3	4.7	1.2	19.2
Holidays and leisure	37.1	30.7	6.7	74.4
Visiting friends and relatives	21.1	9.6	5.8	36.5
Total	76.8	46.9	13.8	137.5

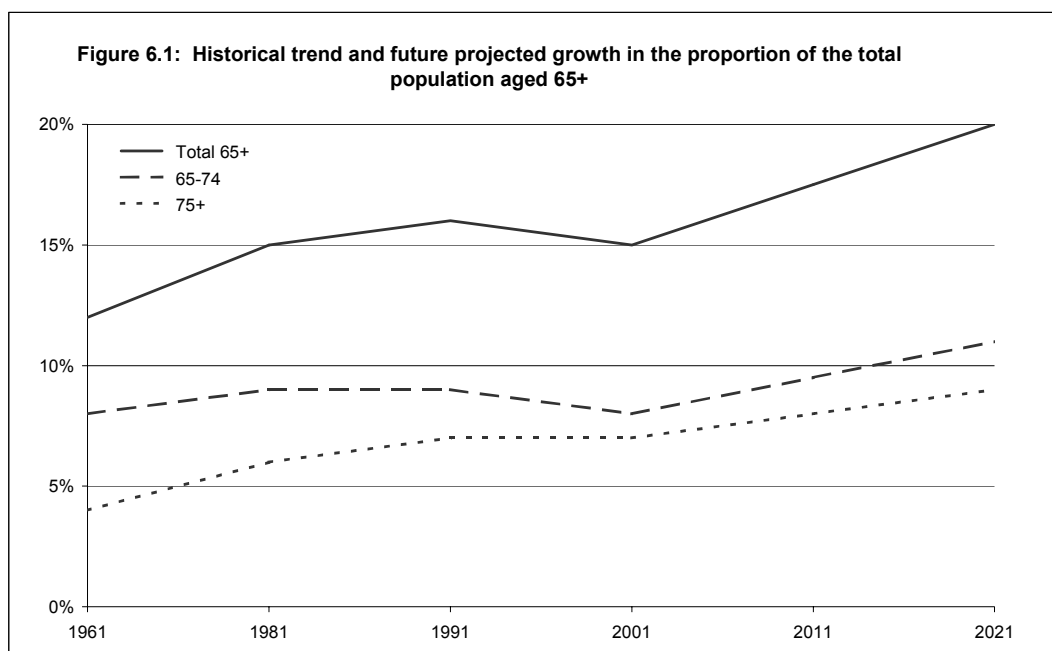
Source: National Passenger Survey. Data factored up to represent number of passenger journeys per annum, compiled from National Rail Trends 2001-2 Vol 3 using annual data from Q4 2000-1. Data drawn from National Passenger Study Wave V (Autumn 2001). Compiled by The Oxford Research Agency. Contact Steve King 01865 728272

- 6.9 A recent government funded survey<sup>43</sup> found that 1 in 3 people of retirement age travel to the homes of family and relatives at least once a week, and that these trips are vital to the maintenance of social and support networks. If rail is not used, this study found that older people were likely to get a lift or take a bus or coach.
- 6.10 Overall, older people value rail travel because the trains are more accessible, reliable, cleaner and faster than buses<sup>44</sup>. They also value the availability of travel information and the ability to board as soon as the train arrives at the platform in contrast to waiting at the bus stop until the bus arrives/comes into use. If the cost of tickets can be reduced for older people there appears to be scope for growing the modal share for this market. Indeed, one of the recommendations of the recent DETR-funded study was the introduction of a national rail concessionary fare scheme, similar to the one being introduced in the bus industry alongside discounted connections for holders of Senior Railcards.
- 6.11 Looking towards the future, population projections suggest that the older persons market is set to grow faster than any other market. As the largest single journey purpose for people in this age group is to visit friends and relatives, the future impact on the economy of not increasing rail's modal share in this market, is potentially very large indeed.
- 6.12 Recent increases in life expectancy have meant that the number of people of retirement age is growing faster than the population as a whole<sup>45</sup> and Figure 6.1 shows that 1 in 5 people will be aged over 65 by 2021.
- 6.13 As life expectancy has increased, healthy life expectancy has also increased. There is an increasingly widespread expectation of remaining mobile for longer<sup>46</sup> and the future implications of this on the transport system needs to be considered now.

<sup>43</sup> Older People: Their Transport Needs and Requirements. DETR. January 2000

<sup>44</sup> Older People: Their Transport Needs and Requirements. DETR. January 2000: focus groups findings p4-4.

<sup>45</sup> The percentage of the population aged 65+ is predicted to increase 29% by 2021 from a 2001 base year, whilst the population as whole is only predicted to increase by 5% over the same period. Office of National Statistics, Table 1, 1996-based Subnational Population Projections - England, Series PP3 No. 10. The Stationary Office, 1999.



Sources: Social Trends 29, 1999, table 1.5 and National Population estimates. Mid 1998, table 1. Office for National Statistics.

- 6.14 Half of those of retirement age use cars, which rises to three quarters for journeys over 50 miles<sup>47</sup>. In the future, not only is the size of the older population set to increase but, to compound the problem, the average distance travelled by car per person *and* the proportion of licence holders (particularly women) are both set to increase (see Table 6.4).

**TABLE 6.4: CHARACTERISTICS OF THE OLDER POPULATION (AGED 70+<sup>48</sup>)**

	2002 base year estimates			2012 % change from 2002 base			2022 % change from 2002 base		
	Male	Female	total	male	female	total	male	female	total
Population projections (000's /%)	2,643	3,987	6,630	+14	+1	+6	+47	+22	+32
Projected annual mileage	11,538	6,556	18,094	+20	+21	+20	+45	+45	+45
Percentage licensed	68%	25%	42%	+7	+18	+14	+10	+33	+25

Source: DTLR Road Safety Research Report No.23: Forecasting Older Driver Accidents and Casualties, August 2001.

<sup>46</sup> Older People: Their Transport Needs and Requirements. DETR. January 2000.

<sup>47</sup> National Travel Survey 1997-99

<sup>48</sup> NB 'older drivers' are characterised as those aged 70+ as it is at age 70 that the DVLA require confirmation of age and medical fitness for the renewal of licences. Drivers aged 70+ are required to reapply for a licence every three years.

- 6.15 Research by the Government's Actuary Department<sup>49</sup> has found that accident liabilities<sup>50</sup> of older drivers increase for drivers over 70 despite the fact that their annual mileage is lower than that of younger drivers. It follows therefore, that the increasing numbers of older drivers, in combination with their higher accident liabilities, are a cause for concern.
- 6.16 The potential economic cost is substantial. Using an average cost per road accident casualty of £36,140<sup>51</sup>, the annual cost of accidents involving older drivers is predicted to be £1.25bn in 2022, a 70% increase on the current annual estimate of £731m in 2002 (see Table 6.5).

**TABLE 6.5: PREDICTED NUMBER AND ECONOMIC COST OF CASUALTIES FOR ALL DRIVERS AGED 70+**

	2002	2012	2022
Number of KSI casualties for all drivers aged 70+	2,635	2,161	1,812
Number of slight casualties for all drivers aged 70+	17,593	23,420	32,790
Economic cost of KSI accidents for all drivers aged 70+	£731m	£925m	£1,250m

Source: accident predictions: DTLR Road Safety Research Report No.23: Forecasting Older Driver Accidents and Casualties, August 2001. Tables 14 & 16. Average cost per casualty: £36,140 in 2000 prices from Highways Economics Note No.1 2000 published by the DTLR. <http://www.roads.dtlr.gov.uk/roadsafety/hen2000/03.htm#t1>

Notes: Over the next twenty years, improvements to the road infrastructure and better education about drink driving, for example, is predicted to cause a decrease in the overall rate of accidents resulting in KSI casualties, but a related increase in the number of slight casualties. Table 6.4 shows that despite the increased mileage made by drivers aged 70+, the rate of accidents resulting in KSI injuries is predicted to fall, but this decrease is less than for the population as a whole. However, the large increase in older drivers will result in a very large increase in the number of slight casualties, particularly amongst female older drivers.

- 6.17 These predictions assume a continuation of current trends. However if a greater proportion of older people could be attracted onto public transport, and onto the rail network for suitable trips, some of these costs could be saved. **Even if only 10% of predicted future additional car miles by the over 70's are made by rail, the saving to the economy would be over £100m per year.**

### ***Estimating the External Environmental and Safety Benefits of VFR Travel by Rail***

- 6.18 We have provided an estimate of the value to the environment and society in general of travel by rail for the purpose of visiting friends and relatives by applying the INFRAS research findings as for the other passenger journey purpose categories. Table 6.6 shows that the current levels of VFR usage by rail provide benefits of £0.2bn per annum. If the Strategic Plan is delivered the benefits would be worth almost £0.3bn in 2010

<sup>49</sup> Detailed in DTLR Road Safety Research Report No.23: Forecasting Older Driver Accidents and Casualties, August 2001

<sup>50</sup> accidents per year per 1,000 drivers

<sup>51</sup> 2000 prices from Highways Economics Note No.1 2000 published by the DTLR.



TABLE 6.6 BENEFITS ARISING FROM VFR RAIL TRAVEL (£M, 2000 PRICES)

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Congestion	14	6
Accidents	71	29
Noise	11	5
Air Pollution	48	17
Climate Change	34	14
Nature & Landscape	2	1
Urban Effects	3	1
Upstream/downstream processes	17	7
<b>TOTAL</b>	<b>200</b>	<b>81</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

## 7. FREIGHT

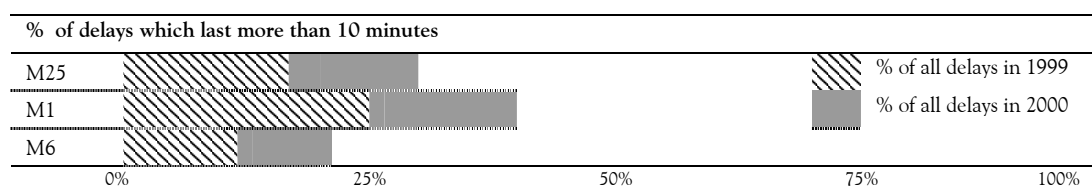
7.1 Some 45bn gross tonne kilometres of freight is carried by rail in Britain (Table 2.7 earlier). The great majority of rail freight movements would have to take place by some mode and therefore the value of the rail freight network largely stems from the external cost savings associated with freight *not* being on the road network. Key benefits of transporting freight by rail rather than road are:

- freeing up capacity on the congested motorway network;
- taking unsuitable traffic off environmentally sensitive roads – both urban and rural.

### *Freeing up Motorway Capacity*

7.2 The dominance of road haulage is becoming increasingly threatened by an increase in road congestion which is adversely affecting journey time reliability (see Table 7.1) and motorway speeds (see Table 3.7 earlier).

**TABLE 7.1: ROAD CONGESTION ON ENGLAND'S MOTORWAY NETWORK**



Source: Trafficmaster data, published by EWS 2001

7.3 There is a clear economic cost associated with this. Estimates of average and total congestion costs for road freight in the UK are given in Table 7.2, alongside the average for 17 Western European countries (EUR17). The cost of road congestion from freight traffic in the UK is £1.19bn.

**TABLE 7.2: CONGESTION COSTS OF ROAD FREIGHT (2000 PRICES)**

	Average cost (£/1000 tkm)	Total cost (£bn)
UK	5.3	1.19
EUR17	5.6	9.39

Source: INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Steer Davies Gleave conversion to £s at 2000 prices using a conversion rate of 0.8068 taken from [www.oanda.com/convert/classic](http://www.oanda.com/convert/classic).

7.4 The CBI consider that the figure is considerably greater than this. They estimate that road congestion costs British businesses around £20bn a year. However, if worsening road congestion prompts a shift from road to rail freight, then, even if only 1% of 'freight' shifts onto rail (broadly equivalent to the 10 Year Plan target), then the extra reliability and speed could save businesses in the region of £0.2bn per year.

- 7.5 However, achieving and maintaining reliability for railfreight is a key challenge on the congested rail network in Britain. The high value freight market, such as mail and fast moving consumer goods, use rail because journey times are more reliable than the road alternative. Indeed the punctuality and reliability on express mail and parcels exceeded any of the passenger services. But the impact of the rail network disruption following the discovery of the extent of the 'gauge corner cracking' problems in late 2000 illustrates how easily this can be lost.
- 7.6 The CEBR estimates the delays and cancellations on the rail network caused by Railtrack's massive repair and maintenance effort following this cost the economy £11 million per day. The disruption hit a wide range of businesses of different types. Those who suffered most were the parts of manufacturing that depend on just in time supplies (mainly in engineering, chemicals and food) and areas in the service sector (some parts of retail) which are also dependent on just in time service. The costs have largely been a charge on profits but employees will have lost bonuses and overtime.

### **ROYAL MAIL: Loss Of Rail Freight To Air And Road**

*Before privatisation, Royal Mail invested £150m in a bespoke distribution network which put rail transport at the core of its primary distribution network. Royal Mail uses 58 trains a night which currently run the length and breadth of Great Britain, 39 of which run in or out of a central hub at Willesden, North London.*

*These so-called Railnet trains travel at high speeds (up to 100mph with faster speeds envisaged) and are required to be extremely reliable (the contract between Railtrack and EWS requires 95% of all station calls to be made within 10 minutes of scheduled time). Even conservative estimations would value the service that Railnet can offer very highly, although an actual value is difficult to estimate.*



*photo courtesy of the Rail Freight Group, 1999.*

*However, because of the sharp drop in reliability post-Hatfield, Royal Mail has been reconsidering its dependence on rail. Poor reliability allows Royal Mail to break clauses in its 10 year, £650m contract with Railtrack and EWS. In the short term, the company is reported to be planning to phase out train routes, in favour of road and air (The Independent, 21/6/2001, [www.ft.com](http://www.ft.com)). The environmental and social costs of this development are likely to be considerable, and it underlines the need for a reliable and resilient rail network.*

### ***A Level Playing Field in Appraisal? –The Condition of Existing Assets***

*Another way in which the status quo plays a significant role in economic appraisal relates to the nature and condition of the transport network to begin with. The costs of a scheme are rightly measured as the amount of money required to deliver the scheme given current conditions. The current extent of the network will be a key factor – resurfacing an existing road is a very different financial proposition than building a road from scratch – but, from the point of view of rail, status is more important yet.*

*It is widely argued that the rail network has suffered from dramatic under-investment over a long period and that, in comparison, the highway network is in far better working order. This means that to achieve a defined “level of service” is likely to cost much more on rail than on road, leaving aside arguments that safety requirements for the rail network are very much more onerous. This could lead to a vicious circle where the comparative disrepair of the rail network will make highway improvements appear better value for money, thus exacerbating the disparity.*

- 7.7 Reliability and high speed are key attributes of modern rail freight. New coal and steel wagons travel at 75mph, nearly 20mph faster than the legal limit for lorries on Britain’s road network and the rail freight industry is trialling 90mph operation of some international services (which would give an advantage of over 60% over the road speed limit).

### **Potential Railfreight Opportunities**

- 7.8 Fast rail freight – in the form of Express Services have very significant market potential, and are expected to be a major contributor to meeting the 80% growth target. The potential in the express market reflects the major structural changes that are occurring in industries, such as food and drink, which are changing the economics of their distribution. Length of haul is increasing as more product manufactured at traditional sources, are being moved further so that manufacturing facilities do not have to be contracted out or duplicated elsewhere. This reduces the on-costs of constant duplicate manufacture and sees external costs solely applied to distribution. The extremely tight competitive road haulage margins can mean hauliers losing this work or even going out of business. Rail has been able to compete with reduced point to point timings whilst beating the congestion problems, HGV driver shortages, trailer swaps etc. which facing the road haulage industry on a daily basis.
- 7.9 The pattern of manufacture means more food and drink product lines are being manufactured in parallel to create large consignments for movement to warehousing for off-site storage near to Regional Distribution Centres. This is done by overnight trucking by HGV. This primary logistics movement has been a target of rail for some time - only the lack of transshipping/warehousing facilities and service delivery have to date prevented expansion of this Just-In- Time market. This is now being addressed at various locations around the country (see case studies of facilities in North West England for example).

### **CASE STUDY 1: Merseyside's New Freight Terminal**

*In June 2001, the Potter Group opened a new £7.5m road-rail distribution centre at Knowsley Industrial Park in Merseyside. Traffic at the terminal includes a daily delivery of imported paper from Scandinavia via Felixstowe.*

*Located just off Junction 4 of the M57, with connections to the West Coast Main Line via the Wigan to Kirkby branch, the new terminal is well connected to both the rail and the road network for onward local distribution.*

*In the words of Derek Potter, chairman of the Potter Group, the new terminal "represents a serious commitment" to a region which has particularly high levels of social and economic deprivation. With local unemployment rates three times the national average, the Knowsley MBC welcomes this type of investment which provides for sustainable economic growth and helps to improve the competitiveness of the local economy.*

### **CASE STUDY 2: Jaguar's Halewood Plant**

*In May 2001, a new terminal opened at Jaguar's Halewood plant which will be used to transport up to 40,000 brand new X-type sports cars destined for the export market. The new cars will either travel to Gent in Belgium via the Channel Tunnel (380 miles by road) or to Southampton (230 miles) for export outside Europe.*

*It is estimated that this new facility will save 45,000 lorry journeys a year which would otherwise have to travel the 380 miles to Gent or 230 miles to Southampton. Using the values published by the DETR for freight facilities grant applications, and assuming the lorries travel half of the journey by motorway and the other half by dual carriageway, the value of the environmental savings are estimated to be £23m per year.*

### **CASE STUDY 3: Portbury Dock and Bristol**

*In December 2001 the line between Bristol and Portishead connecting to Portbury Dock was opened. The £21m scheme, supported by the largest ever Freight Facilities Grant of £15.5m involved complete relaying of the Bristol to Portishead branch and a new spur to the dock, and two rail terminals at the dock – one for coal and other bulk products and one for cars and containers.*

*The scheme is projected to remove 98,000 lorry journeys per year, equating to 5 million lorry miles.*

## ***Removing Freight from Unsuitable Roads***

### ***Urban Areas***

- 7.10 Up until now, the value of rail freight has been attributed to the removal of lorries from motorways. However, it also has a role in moving freight that would otherwise be on rural roads and (generally less well realised) a major role in terms of moving goods in and out of major centres of population, thus removing lorries from environmentally sensitive roads in urban areas.

#### **Rail Freight In London**

**Building materials:** some 14 railheads in Greater London receive some 3.5 million tonnes a year of crushed rock, marine-dredged aggregate, sand, cement and building blocks by the trainload from sources well outside the region. Processing takes place at many railheads where raw materials are turned into concrete and coated road-stone to supply the needs of the capital. Many of the sidings are centrally located, allowing materials to reach the heart of London without having to use the congested roads.

**Refuse:** three railheads receive domestic and commercial refuse from across north and west London which is compacted and then sent forward in four trainloads a day to landfill sites in the Home Counties where former brick-pits are being restored to normal use.

**Mail:** the Princess Royal Distribution Centre (PRDC) at Wembley is the national hub of the “Railnet” services that carry first-class letter mail for Royal Mail. Some 40 trains a day carry 75% of the UK’s long-distance post. Close proximity to the North Circular road ensures good road access to sorting centres and post offices across London.

**High-value freight** of many kinds is handled through several specialised railheads. For example: the Ford Motor Company at Dagenham is served by trainloads of components and assembled cars, reeled paper is handled through Barking, substantial quantities of mineral water are imported from France direct by rail via the Channel Tunnel to Neasden, high-quality copier paper is imported via Cricklewood, and a wide range of manufactured and consumer goods moved in containers through the Channel Tunnel are handled through the Willesden Euroterminal.

Source Rail Freight Group Briefing Paper 10: Rail Freight in London [www.rpg.org.uk](http://www.rpg.org.uk)

### ***Rural Roads***

- 7.11 Much of the aggregate quarrying in Britain is in environmentally sensitive areas such as the Peak District and the North Pennines. The SRA’s Rail Freight Facilities Grant has been used to develop a number of rail based flows – such as limestone from the Buxton area on the edge of the Peak District National Park that would otherwise be carried on rural roads.

7.12 Railtrack estimate the value of the environmental benefits of the current level of freight on Britain's' railways to be £7bn per year<sup>52</sup>. In terms of accidents, Railtrack figures also suggest that rail is 27 times safer than road and that it also contributes less to global warming than road transport - per tonne carried, rail uses less fuel and produces around 80% less carbon dioxide than road<sup>53</sup>. Road transport as a whole accounts for 34% of the UK's total energy use<sup>54</sup>

### *Accident and Environmental Costs*

7.13 The average external costs for freight travel in the UK are shown in Figure 7.1 and compared against the average for 17 Western European countries (EUR17) in Table 7.3. The costs in the UK are similar to the costs for the EUR17.

**TABLE 7.3: AVERAGE ACCIDENT AND ENVIRONMENTAL COSTS (1995 EURO)**

Euro/1000tkm	AIR		ROAD		WATER		RAIL	
	UK	EUR17	UK	EUR17	UK	EUR17	UK	EUR17
Accidents	0	0	9	12	0	0	0	0
Noise	9	19	6	7	0	0	1	4
Air pollution	3	3	35	37	11	10	4	4
Climate change	171	154	16	16	4	4	3	5
Nature and landscape	6	9	1	3	13.2	1	0	1
Urban effects	0	0	2	2	0	0	1	1
Up-stream & down-stream processes	23	21	11	11	3	3	2	5
<b>Congestion</b>	<b>n/a</b>	<b>n/a</b>	<b>6.6</b>	<b>7.0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>

Source: INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000

7.14 Average costs in this table are expressed in *Euro per 1000 tonne kilometres*. The cost of UK rail freight is 11 Euro whilst the cost for road freight is 7.2 times higher at 80 Euros. By far the most costly mode is air freight, at 212 Euros. The largest costs for both road and rail freight are from air pollution and climate change<sup>55</sup>, although rail has considerably less impact than road freight. As for passenger, airfreight is the costliest and the predominant effect is climate change.

7.15 For EUR17, the cost for rail travel is 19 Euros, almost twice the cost in the UK. This contrasts to the figures for passenger traffic, where the average cost in the UK is twice the European average.

<sup>52</sup> Network Management Statement for Great Britain, Railtrack 2000

<sup>53</sup> How we're measuring up: our statement on social and environmental issues, Railtrack, 1999

<sup>54</sup> Transport Statistics Great Britain, 2000 Edition, DETR, 2000

<sup>55</sup> The emissions of electricity production are considered within air pollution and climate change costs.

7.16 The total costs are given in Table 7.4. The total cost of the accident and environmental impacts of rail freight in the UK is £113m/year (2000) and £15,139m year for road freight.

**TABLE 7.4: TOTAL ACCIDENT AND ENVIRONMENTAL COSTS (£M/YEAR, 2000 PRICES)**

	AIR	ROAD	WATER	RAIL
UK	407	15,139	5	113
EUR17	2,219	125,866	1,928	3,486

Source: INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Steer Davies Gleave conversion to £s at 2000 prices using a conversion rate of 0.8068 taken from [www.oanda.com/convert/classic](http://www.oanda.com/convert/classic).

### ***Valuing the freight rail network***

#### *Approach to Estimating External Environmental and Safety Benefits*

7.17 For freight, as for passenger travel, Europe-wide research provides a means of attaching valuations to the external costs of travel by different modes. As before, it is possible to use this information to make an assessment of the value of all of the markets for rail travel by estimating the costs that would be incurred if there were no rail network, and provides a useful indication of the scale of benefit the rail network brings.

7.18 Applying the figures on freight tonne kilometres travelled on Britain's railways for commuting to the unit valuations derived from this research we can derive an estimate of the value of the rail network by considering what would happen in its absence. For this purpose we have assumed that;

- all freight journeys are 'essential' so all would still be made;
- 90% of rail freight would switch to road; and
- 10% would switch to air.

7.19 The estimates are shown below in Table 7.5 for current travel patterns and for a future scenario wherein rail travel had increased in line with the forecasts contained in the 10 Year Plan. They show that the current freight network delivers benefits in excess of £1bn per year – which if the freight targets in the 10 Year Plan are achieved would rise to over £2.3bn by 2010.



TABLE 7.5 BENEFITS ARISING FROM FREIGHT RAIL TRAVEL (£M, 2000 PRICES)

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Congestion	61	79
Accidents	83	108
Noise	65	84
Air Pollution	327	424
Climate Change	323	420
Nature & Landscape	15	20
Urban Effects	18	24
Upstream/downstream processes	125	163
<b>TOTAL</b>	<b>1,018</b>	<b>1,321</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWF External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

## 8. SUMMARY AND RECOMMENDATIONS

### *Summary*

- 8.1 Our analysis has shown that it would be highly misleading to conclude, on the basis of the apparently low passenger and freight modal shares, that rail is unimportant to the operation of the UK economy, or to the sustainability of our environment and way of life. On the contrary, in those markets where rail operates most effectively – long distance travel, commuting in urban areas, city centre to city centre and bulk freight movements - rail is a major mode, in some cases the dominant mode, and as such rail's success or failure, growth or decline, have great ramifications.
- 8.2 What is clear is the pivotal role that rail plays in terms of its contribution towards achieving the aims of government policy on;
- the environment, safety and health;
  - the economy; and
  - social inclusion.

### *The environment, safety and health*

- 8.3 We have used the findings of research conducted on behalf of the UIC to provide a broad estimate of the value of the 'external' or non-user benefits of rail travel (see Table 8.1). These figures are predominantly environmental and safety related and should be seen as a partial, first order estimate of these benefits (para 3.36). Nevertheless, the benefits are of a significant scale, in relation to the level of funding that goes into supporting rail services.
- 8.4 Current passenger services are estimated to provide environmental and safety benefits worth in the region of £1.9bn (compared with annual support of circa £1bn). Freight services bring further benefits of around £1bn per annum. If rail traffic achieves the growth targets set out in the Strategic Plan, the passenger benefits would be worth a further £0.7bn pa, whilst the freight traffic benefits would be worth a further £1.3bn.
- 8.5 Thus in combination we estimate that rail passenger and freight use provide environmental and safety benefits to the tune of £2.8bn per year. If the 10 Year Plan targets are achieved the *additional* benefits would be in excess of a further £2.1bn pa.

TABLE 8.1 BENEFITS FROM ALL RAIL USE BY SECTOR (£M, 2000 PRICES)

	Current Year (2000)	Additional Benefits with Strategic Plan/10 Year Plan (2010)
Commuting	819	333
Business	588	239
Tourism & Leisure	284	110
VFR	200	81
Freight	1,018	1,321
<b>TOTAL</b>	<b>2,910</b>	<b>2,084</b>

Source: Steer Davies Gleave estimates based on data from INFRAS/WWW External Costs of Transport: Accident Environmental and Congestion Costs of Transport in Western Europe, March 2000. Note: the current year analysis assigns the current year rail users to other modes and calculates the additional costs. The base year for the 2010 future year scenario assigns the additional rail users between the do-minimum and the do-something 10 Year Plan scenarios to other modes, assuming do-something growth in other modes.

### *The economy*

#### 8.6 Rail impacts upon the economy at a number of levels:

- international competitiveness – in particular the contribution it makes to London’s World City status, a significant driver of the UK economy;
- growth of regional cities – supporting regional economic policy of spreading economic benefits out of London and enabling key growth centres such as Birmingham, Leeds and Manchester to provide services nationally and serve the expanding workforce that their growth requires;
- supporting regeneration of regional cities - a key plank in the economic policies of areas such as Nottinghamshire, the Cardiff Valleys and the PTE’s by providing access to jobs from surrounding areas of high unemployment;
- the implications in terms of land use, development pressure and the Green Belt - without rail there would be enormous pressures for dispersed lower density development that would threaten the sustainability of the Green Belt around London and many of our major cities;
- as a major industrial sector in its own right – 130,000 jobs with an employment multiplier perhaps six times greater within the manufacturing industry;
- an important component in tourism – one of the largest sectors in the UK economy – bringing in over 1/3 of London’s domestic visitors, for example, but also heavily used by overseas tourists travelling to other cities and some of the more remote parts of the UK economy which rely on tourism for much of their income.

8.7 While it is indisputable that rail is vital to many of these elements of the economy, attaching a value is much harder. In most cases, in order to answer this, we have to consider the counterfactual – what would happen if we didn’t have the rail network? We have developed a number of indicators, which whilst only partial, can be thought of as reinforcing the view from the environmental analysis, namely that rail brings significant benefits to the economy.

- 8.8 If there was no rail network in London most commentators would agree that the result would be gridlock – if, for the purposes of attaching a value to this, we translate ‘gridlock’ into a doubling of the average commuting time for the 6.9m London and South East commuters, it would cost the economy approximately £9bn a year. Extending the same analysis to the other major conurbations (as represented by the PTE areas) would increase the cost to the economy to over £15bn per year.
- 8.9 For business travellers, we have looked simply at the additional value that arises because of the ability to undertake productive work on the train. Looking only at the Strategic Routes (former inter-city), this is worth around £0.7bn pa. If we were to consider what the benefits of having the Strategic Routes are, the figure would be much higher. The CEBR has estimated that following the Hatfield and gauge corner cracking crisis, when the rail network was still open but timetables were severely disrupted, the delays were costing the economy £11m per day, or almost £0.4bn pa.
- 8.10 For tourism, rail is particularly important because it is often the mode of choice of overseas visitors to Britain - these visitors have higher levels of spend than domestic visitors and, by definition, are bringing money into the UK economy which might otherwise be spent elsewhere (an international competitiveness dimension). Train travel is used by almost a third (31%) of these domestic visitors to London, which is twice the national modal share. In 2000, £1bn was spent by these domestic visitors, whilst in the rest of the country, an additional £1.8bn was spent by domestic visitors travelling by train.
- 8.11 It is the rural economy that is often particularly reliant on tourism, and rail plays a number of important roles – bringing visitors to the countryside in a sustainable manner, thus avoiding the adverse impacts on the natural environment that car-borne tourism can cause – and also providing a lifeline to local communities.

### *Social Inclusion*

- 8.12 Arguments that high levels of subsidy are being poured into rail to support the travel habits of the middle classes are misguided. Rail is clearly heavily supported by public money, but most of the funding goes into the local and regional networks, which are precisely the lines which are used predominantly by lower income groups. Certainly, more affluent groups travel further, and hence seem to be a disproportionate user of rail (and air). However, if the number of actual journeys undertaken is used as the yardstick, almost half of all rail users are not in social groups A or B and this rises to 60% on regional services.
- 8.13 Rail has a strong social inclusion role - over 55% of people do not have a family member living within 1 hours travel time. For the 27% of households who do not have access to a car, rail is the only realistic alternative for journeys over a few miles in length.
- 8.14 With an ageing population rail has a role to play in providing safer forms of travel for this sector of the population. Even if only 10% of predicted future additional car miles by the over 70's are made by rail, the saving to the economy would be over £100m pa.

## **Recommendations**

- 8.15 This study has, in summary, been able to identify a wide range of external benefits that the railways bring to the country as a whole, and to individual sectors of the population and the economy. In particular, railways:
- enable the economy of London and other major cities to function and grow;
  - can act as an agent for economic regeneration;
  - help regional economies;
  - allow business users fast city centre to city centre travel and to work during the journey;
  - support tourism in many cities and rural areas, including more remote areas like the Scottish Highlands;
  - are used by a full range of social classes and income and age groups;
  - can provide a reliable freight alternative to increasingly congested roads.
- 8.16 Investment in railways also creates and sustains skilled manufacturing jobs, within, but also well beyond, the immediate suppliers.
- 8.17 From these roles, the existence and development of the rail network also helps the environment, safety and health, since it compares well in these areas with road and air transport.
- 8.18 Some of these findings run against assertions made by some analysts and academics – for example, it is often said that the railways are marginal to the economy, to transport and to tourism, are used mainly by the well-off, and that spending on them is therefore poor value for money. Many of the railway network’s current and potential roles are not widely recognised, or valued, and are not currently included, or recognised, in the plans and strategies produced by central Government and by local authorities and regional agencies.
- 8.19 Our main recommendation arising from this study is therefore that the Government, and public bodies in general, should include the railways, and the benefits that they can and do bring, in their plans, strategies and appraisal, and that the railways should be funded accordingly. In particular, this report has shown that there are a number of ways in which investment in railways and roads is not judged on the same basis: a “level playing field” between railways and other modes is essential.