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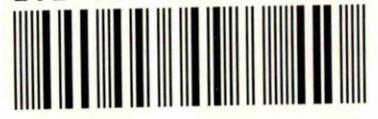
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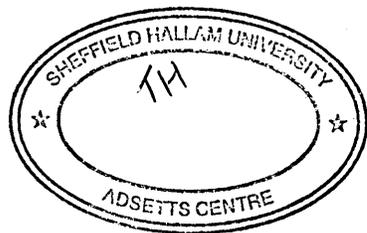
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Railways, Land-Use Planning and Urban Development: 1948-94

Russell Haywood

A thesis submitted in partial fulfilment of the requirements of
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for the degree of Doctor of Philosophy

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Thanks

Many people and organisations have provided me with help and support over the five years or so that I have been carrying out this research.

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MIND THE GAP: RAILWAYS, LAND-USE PLANNING AND URBAN FORM: 1948-94

A thesis submitted for the award of PhD by Russell Haywood

Abstract

The aim of this thesis was to bridge a gap in the research literature with regard to commentary on and evaluation of the relationship between British land-use planning and the management and development of the railway network in the years between 1948-94 when British railways were in public ownership. Although the research was focused on the nationalised main line system, it reviewed other rail systems where this was helpful to the analysis.

The research utilised a review of the relationship between the railway network and urban form in the years to 1947 to derive analytical criteria and to serve as a point of departure for the core of the thesis. The overall relationship between the two sectors post-1948 was explored, at a broad geographical scale, with regard to institutional relationships, policy, and outcomes with regard to the spatial relationships between the railway network and patterns of urban form. The results of this research were used to derive hypotheses about the relationships which were then tested in a case study of the Manchester conurbation.

The main conclusions are that there were few periods between 1948-94 when the ideological, institutional and policy frameworks necessary for a close and positive relationship between the planning and railway sectors were in place simultaneously. The contexts which were most favourable were with regard to: the location of new towns and town expansion projects in the South East in 1950s and 1960s; the improvement of railway networks in the PTE areas between 1968-79 along with the development of strategic policies for the restriction of major trip generators to CBDs; the period between 1985-94 when a surge in the property market was accompanied by BR Sectorisation, investment in other forms of fixed track transit, and the promotion of major development projects at and around stations, especially in CBDs.

The research concludes by identifying opportunities for further historical research and briefly reviewing the relevance of the findings to contemporary research.

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PART ONE

Introduction.

The core of this thesis is focused on research which described, analysed and evaluated the relationship between the management and development of the publicly owned national railway system and the operation of the land-use planning system between 1948-94.

Part One comprises chapters one and two. Chapter one is the introduction and explains the refinement of the research focus, the derivation of the research questions, and the evolution of the methodology and analytical framework. It concludes with a summary of the content of subsequent chapters.

Chapter two is a summary of the relationship between the railway network, patterns of urban form, and the development of planning ideology and practice in the years between 1830-1947. Chapter one explains why this research into the historical roots of the relationship between the two sectors was necessary before proceeding to the core of the thesis: to summarise, it enabled conclusions to be drawn which served as a point of departure for the subsequent research, and provided a set of criteria used in the analysis of the relationship between the two sectors between 1948-94.

CHAPTER ONE

INTRODUCTION

There has to be a starting point for a PhD thesis, a moment in time when the research idea first crackled into life. In this case the catalyst was a phrase in 'This Common Inheritance', the seminal Government publication which was a turning point at the end of a decade of policy making which had undermined the basis of post-war land-use and transport planning. The phrase followed a discussion of the potential use of planning powers to guide new development to locations which would reduce the need for transport and/or permit use of more energy efficient public transport as an alternative to the motor car:

However, not enough is known about the relationship between choice of housing and employment location and transport mode to allow the Government to offer authoritative advice at this stage (Department of the Environment (DoE), 1990a, 87).

This marked a resurgence of political commitment to policies which would seek to bring about a planned relationship between land-use patterns and transport networks, rather than just bending to market forces and facilitating the development of urban form into patterns dominated by the locational demands of the dominant modes, the motor car and lorry. But the statement also seemed to deny decades of work by academics and practitioners to describe and understand relationships between land-use patterns and transport networks. As a result, I became inquisitive about the history of land-use and transport planning and relationships between them.

But why the focus on the relationship between the *railway* network and land-use planning? The reasons for this are to be found in the transport policy debate in the early 1990s; the prior economic boom had been accompanied by increased demand for travel in transportation networks that were unable to provide the necessary capacity. The result was congestion, particularly on the road network, which pushed transport issues further into public view. The road congestion issue was brought to a head by publication of revised National Road Traffic Forecasts (Department of Transport (DoT), 1989a), which projected increases in traffic over 1988 levels of between 83 and 142% by the year 2025. The DoT responded to this, and the accompanying political pressure from the road lobby¹, by announcing an expanded programme of trunk road building (DoT, 1989b). This typified the single-

mindful support for 'the great car economy' which had led the Government to relax its influence over public transport through bus deregulation and increased commercialisation of the railway network by forcing down the level of public subsidy.

The 1980s had also seen growing public concern at the environmental impacts of rising road traffic through exhaust pollution and loss of countryside from road building and associated development. These led to development of 'the New Realism' (Goodwin et al, 1991) in transport policy, whereby the view that ever rising volumes of traffic can be accommodated through road building was to be fundamentally challenged. It was the resultant political pressures from these transport related issues, and concern over other environmental issues such as acid rain and marine pollution, which led to the changes in Government attitudes towards the environment, transport and the planning system.

In the early 1980s planning had been seen by Government as a brake on enterprise and economic growth which; 'imposes costs on the economy and constraints on enterprise that are not always justified by any real public benefit in the individual case' (DoE, 1985, 10). By 1986 an Enterprise and Deregulation Unit was operating within the DoE which was looking at reducing the 'unnecessary burdens' of planning control through reducing its scope and developing a positive approach to development, 'recognising that there is always a presumption in its favour, unless that development would cause demonstrable harm to interests of acknowledged importance' (DoE, 1986, 21). However, the environmental debate placed limits on this deregulatory stance. Publication of 'This Common Inheritance' was a crucial part of the move away from it, towards seeing the planning system as playing a positive role as part of what became the 'Strategy for Sustainable Development' (DoE, 1994a).

An important component of this change was a desire to lessen the growth and environmental impact of road traffic. In light of the claimed lack of a firm knowledge base for offering authoritative advice about relationships between transport demand and land use the DoE sponsored research (DoE, 1993) which informed the development of policies aimed at reducing demand for travel and facilitating travel by a variety of modes. These became a central part of the Government's sustainable development strategy and reflected a major shift away from the deregulatory policies of the 1980s towards a more prescriptive regime. For

¹ The British Road Federation pointed out that; 'the 1980-86 growth in car traffic was 8% higher than the most optimistic forecast' (1987, 7).

example in order to reduce car dependency Planning Policy Guidance Note 13 (PPG13) stated:

...local authorities should adopt planning and land use policies to:

- promote development within urban areas, at locations highly accessible by means other than the private car;
- locate major generators of travel demand in existing centres which are highly accessible by means other than the private car; (DoE, DoT, 1994b, 3).

An important goal of these new policies was the development of urban form in ways which would increase the utility of the railway network: after years of being marginal to the concerns of land-use planning, there was to be an attempt to integrate the two. These policy changes were taking place shortly after a period of optimism with regard to the national railway network: the late 1980s boom was particularly strong in the South East and led to growth in ridership on both the British Rail (BR) network and London Underground. Outside the South East steady work by local authorities, passenger transport executives and BR had produced some remarkably positive results: new stations and the reopening of passenger services on lines which had lost them years previously. Town planners were centrally involved in these developments (Haywood, 1992). This optimism around rail, coupled to the policy shift towards better integration between land-use planning and transport planning, formed the rationale for the thesis:

future planning for maximum utilisation of the rail network needs to be informed by thorough evaluation of what has taken place in previous years.

Initial reviews of the literature revealed a great deal of material that dealt with the post-war history of the railway system, with Allen (1966) and Gourvish (1986) as outstanding examples, and land-use planning, with Cherry (1974) and Hall (1989) as outstanding examples. However, there were few publications which looked at relationships between transport, planning and land development in the post-1947 period, with Tetlow and Goss (1965) as significant, and very few which looked specifically at the relationships between the railways and land development, as Kellett (1969) did with regard to the Victorian period (which, of course, predated the emergence of State land-use planning in Britain). Only Peter Hall had researched the latter consistently over the post-war period, and that had been as part of more broadly based research into strategic planning and decentralisation, largely focused on the South East (Hall, 1971; Hall et al, 1973a and b; Hall, 1988; Hall, 1989), with only one significant publication which looked at railways and land development in provincial cities (Hall and Hass-Klau, 1985).

There has been a fairly continuous stream of literature concerned with the economic impacts of urban transit systems. This is dominated by North American literature (as reviewed in Cervero and Landis, 1995, and Giuliano, 1995) and is not directly relevant to the UK situation. However, one strand of it was concerned with using land-use change as evidence of property impacts and for considering its impacts on transport behaviour. For example, Heenan's (1968) findings highlighted the concentration of high-rise apartments and office developments within a five-minute walk of stations on Toronto's Yonge Street subway. The importance of policy and institutional contexts was emphasised by Knight and Trygg, who pointed out that:

'.....the achievement of major land use 'impacts' around transit stations must require the concerted action of other powerful forces in addition to transit-induced accessibility increases' (1977, 233).

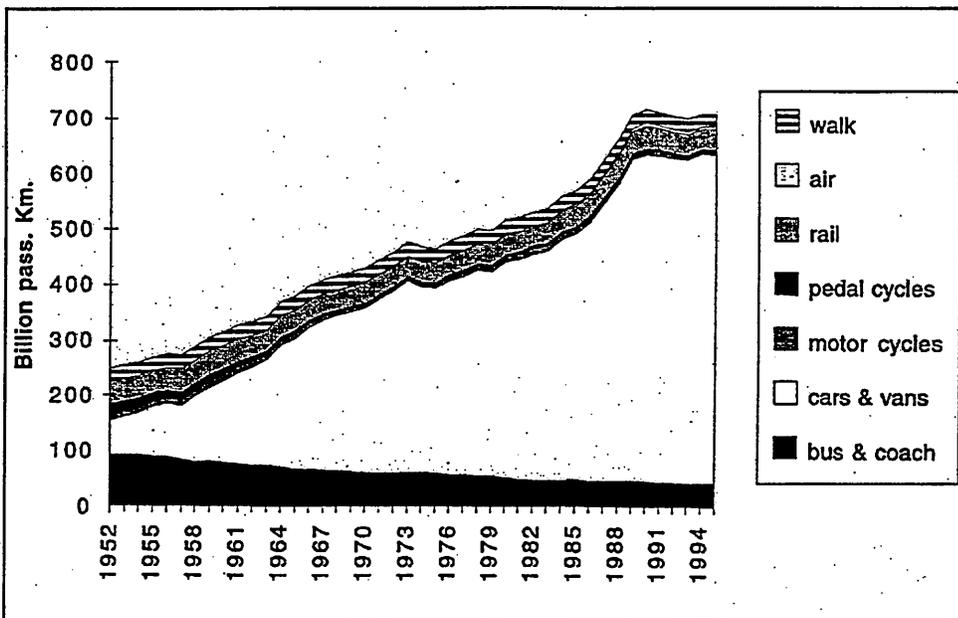
However, even British publications in this area, as reviewed in Grieco (1994), were not specifically focused on the role of town planning.

The absence of a strong thread in the literature reflected the fact that there existed a lacuna in British planning and in management of the nationalised railway with regard to the relationships between the two sectors. There existed not just a need for research and analysis, but also an opportunity to make a unique contribution to knowledge. The main thrust of the thesis came into view:

an historical overview of the relationship between urban form and the railway network with a focus on evaluation of the impact on this of the planning system created by the 1947 Town and County Planning Act.

Initially the likely product of the research seemed self-evident: the railway system was at best a marginal influence on the land development process during this period, and land-use patterns developed in ways which largely ignored the potential utility of the railway network. This view arose from a consideration of official transport statistics. These show that relative patronage of the railway system for the carriage of passengers, and absolute patronage with regard to freight, declined from a position of dominance to a relatively marginal position when compared with the huge growth in road traffic (see figure 1 for passenger data). In addition, whereas the road network had grown in length as well as in the volume of traffic it carried, the railway network was considerably smaller in 1994 than it was in 1948; it had been 'undeveloped'. As a result, popular consciousness about planning and transport was dominated by images of burgeoning suburbanisation characterised by road oriented patterns of development, typified by the 'edge city' (Sudjic, 1993) of the 1980s.

Figure 1: The growth of travel in Britain 1952-1995



Source: Potter (1997)

But more careful consideration of the interrelationship showed that it merited much closer study because:

- although rail transport had been overshadowed by road transport, it was still significant, and this significance was very variable spatially;
- although certain parts of the railway network had been undeveloped, other parts had received significant investment, new railways had been built, closed railways and stations had been opened, some lines had experienced real growth in traffic;
- although land development had been dominated by road based transport considerations, there were some notable exceptions wherein the transport properties of nodes on the operational railway system had been an important consideration and there had been a clear intention to integrate land development with rail access;
- land and buildings had been released into the development process as a result of the contraction of the railway industry and had presented significant opportunities for the planning process; evaluation of the way these were treated was a significant element of any overall evaluation of post-war planning, as well as being of special significance in considering the relationships between land-use planning and the railway network.

The relationship between the railway and land-use planning sectors in the post-war period was therefore not as clear-cut as it first seemed and further study was clearly justified. Also the contemporary commitment to bringing about a closer

relationship between urban form and the railway network through integrated planning, meant the product of this research held the promise of usefully informing current policy making.

The Research Methodology

The research subject matter lies at the interface between transport planning and land-use planning. A conventional research approach would be linear, to consider various theoretical positions as a basis from which to develop hypotheses to be tested by empirical work (Flick, 1998). Theoretical approaches to the relationship between transport and development (that is development in the broadest sense ie. economic development, not just urban development) are broadly based. Hoyle and Smith (1998) cite five essential ideas which underpin them: historical perspectives; nodes, networks and systems; modes, choices, intermodalism and flexibility; deregulation and privatisation; and holistic approaches. Specific theoretical approaches to transport, which have been developed into transport planning tools by public authorities and operate at the interface between transport and land use, include land-use trip generation and accessibility models which are underpinned by theoretical assumptions about transport behaviour (Pas, 1995). These could be used to explore specific relationships between patterns of land-use and the rail mode. However, they are usually used to measure an existing situation with a view to predicting a future situation whereas, from the outset, this thesis was concerned with a backward looking historical analysis of very broad inter-sectoral relationships.

Theoretical approaches to planning are equally varied, perhaps more so, as the nature of planning practice has changed as a result of the impact of other disciplines: as a leading planning theoretician says:

The planning tradition is a curious one, built up through a mixture of evangelism, formal institutional practice, scientific knowledge and, increasingly, academic development (Healey, 1997, 7).

The approaches have included those based around architecture and urban design which have produced theoretical models of macro-scale patterns of urban development; geography and a focus on macro patterns of land use, models of city growth and urban form; sociology and the review of the impacts of planning on social space; and more recently the 'argumentation' approach based around a new paradigm for planning based around the processes of engagement with policy making in democratic societies (Healey, 1997).

In considering the contribution of 'holistic approaches' to transport and development, Hoyle and Smith state that:

It is important to emphasize, ...that *transport systems are dynamic wholes*, and that their evolution and operation should ultimately be perceived and analysed in this context. In order to

understand how any system operates today, what its problems are and how it might be improved, it is usually helpful to know how it has originated, grown and developed (1998, 16).

In terms of the phraseology used above, '*transport systems*' can be interpreted for the purposes of developing the approach to this thesis as the relationship between the railway network and patterns of urban development, as influenced by planning policy and practice. As the literature review showed that there was not a robust thread of literature on the relationships between railways, planning and land development for the post-1947 period, the statement provides a robust justification for what is proposed. It is significant that they identified the relevance of 'historical perspectives' as well as 'holistic' ones.

Although it has been shown that theoretical approaches exist to certain aspects of the relationships between planning, railways and urban development, they were not appropriate to the sort of research being undertaken which essentially, was historical, focused around two sectors of State activity, and demanded the 'holistic approach'. The thesis was primarily aimed at filling a gap in the 'historical' and 'holistic' literature. It can be characterised as essentially 'what' and, to a lesser extent, 'why' research: after 1947, 'what' happened in the railway and planning sectors, what were their interrelationships like, and 'why' were they cast in that particular way? The research, therefore, essentially demanded a pragmatic approach and it was not appropriate to begin from some narrow, specific theoretical position. The methodology evolved on an iterative, step-by-step basis out of the process of engagement with the subject matter.

The research was concerned with the railway and planning sectors and it was clear from the outset that, before any analysis could take place, it was necessary to establish the basic facts and chain of events in each sector post-1947. As these were fundamentally bound up with public policy making, as opposed to the other sorts of subject matter which other kinds of transport research might be focused upon, it was clear that the research was policy oriented. The literature on research methodology showed that it would therefore be likely to focus on 'actionable factors', to be 'multi-dimensional' in order to obtain a well rounded and balanced picture, and to be 'nationally representative' (Hakim, 1997). It was also clear that the research would be primarily qualitative, concerned with describing, analysing and evaluating the institutional structures in which policy was developed, policy itself, and the product of the interaction between institutional structures and policy, the juxtaposition of development and the railway network. To a more limited degree, the research would be quantitative, as both transport networks and behaviour, and land-

use patterns are, to varying degrees, measurable. As the research was essentially historical, source material would be archival, primarily contemporary official documents containing qualitative and quantitative material. As the thesis aimed to explain the findings it was also necessary to review publications which offered commentary on and analysis of the subject matter, particularly contemporary publications, as it was important to differentiate between comment and criticism which was made at the time, and that which was made with the benefit of hindsight.

The first step was to fix the scope of the research with regard to space and time. Given that the vast majority of railway lines in the country, known as the 'main line railways', had been operated by the State owned industry since nationalisation under the 1947 Transport Act, then it was this network which was central to the thesis. However, where it has been fruitful with regard to understanding the subject matter and developing arguments to consider other railway systems, such as the London Underground, then these have been considered too. Given the fact that the nationalised railway operated in England, Wales and Scotland, then Great Britain was the geographical context for the study.

Under the respective legislation, the main line railways came into public ownership and the planning system came into operation in 1948: this fixed an initial point in time for the start of the study. The end point was easy to identify; the moves in the early 1990s to privatise British Rail had massive implications for the way in which it would be managed and would fundamentally change the organisational relationship between State land-use planning and management of the railway network. Under the 1993 Railway Act, April 1st 1994 was the date on which the shadow structure for the privatised railway came into effect, so this marked the end point of the study.

After fixing these overall parameters the second step was to sketch out 'key events' with regard to development of the railway network and operation of the planning system between 1948-94 and to consider the possible interrelationships between them. In doing this it quickly became clear that, in order to begin to understand these interrelationships, it was necessary to consider the period before 1948. This was because the railway network, patterns of urban form, the relationships between the two and, to a limited degree, the practice of town planning, had all existed for many years beforehand. Knowledge and understanding of these matters was an important precondition for studying the post-1948 era. Therefore the third step was the realisation that analysis of interrelationships before 1948 became necessary to identify important visible and latent factors around

which to develop the research methodology, and to produce a position statement of where things stood in 1947. The latter could act both as a point of departure for, and inform the analysis of, the period between 1948 and 1994.

The historical review showed that, in the period of its development between 1830-1914 the relationships between the railway network and its operating contexts were generally positive, given that the network grew, the amount of traffic it carried increased, and most of this was commercially profitable. By 1914 the period of railway construction was largely over and the basic geography of the network showed little change thereafter. But the economy continued to change in the years to 1947 and in response to this, and to the rising importance of road transport, the country's urban geography and the institutional arrangements with regard to transport began to change too. The unchanging railway network found itself increasingly out of step with the economic, geographical and institutional contexts within which it was operating. This thesis is an exploration of the factors affecting the *spatial* dimension to the readjustment which was necessary to reintegrate the railway network with its operating context, which itself would continue to change, in the aftermath of nationalisation in 1947.

The pre-1947 review explored the relationships between railway management and the management of urban growth, particularly with regard to the development of town planning ideology, the developing role of the State, the institutional manifestations of this, and the co-ordination it produced or failed to produce. In order to test the knowledge and understanding gained through this phase of the research, it was written up as an article focused on developments in London and successfully submitted for publication (Haywood, 1997a). A further article demonstrating one specific aspect of planning ideology's pre-occupation with aesthetic matters at that time was also published (Haywood, 1997b). The pre-1947 review led to the fourth step in the development of the methodology, the use of the concept of the *interface* between the railway system and the land-use planning system and a realisation that this needed to be defined in ways which enabled the formulation of a set of specific and interrelated research questions as shown in figure 2.

Because, post-1947, the management of the railway network and the land-use planning system were both carried out by agencies of the State, it was concluded that two important dimensions to the interface between them were concerned with institutional arrangements and public policy. In addition, the product of the two activities was the running of trains and land development, which are both

discrete, physical entities with distinct geographical characteristics which are likely to exhibit varying degrees of spatial association. The analysis and evaluation of this physical outcome of the interrelationship was therefore adopted as a third dimension to the interface.

Figure 2: the research questions with regard to the three dimensions to the interface between the railway and land-use planning sectors.

1. What were the institutional structures for railway management and land-use planning and to what extent did these facilitate the development of positive relationships between the two sectors?
2. What were the main features of policy for the two sectors and to what extent was policy in each concerned with the relationship between them, as opposed to other matters, and was this concern likely to be positive or negative in its impacts on utilisation of the railway network?
3. What was the outcome of the interrelationships between institutional structures and policy for the two sectors as measured by: the geographical characteristics of the railway network and the intensity of the service on it; patterns of land use; and the degree of spatial association between patterns of land-use and the railway network?

The fifth step in development of the methodology was the utilisation of the product of the overview of the pre-1947 period to provide a position statement which acted as a point of departure for analysis of the post-1948 period. This contains:

- an analysis of the geographical characteristics of the railway network which was nationalised in 1947; it was particularly important to identify those aspects of the network geography which required attention in the post-1948 period in order to increase its utility and spatial association with patterns of urban form;
- an understanding of the interrelationships between the railway network and urban form during the period when the railway network was the most important transport influence on urban growth. It was particularly important to identify the positive and negative elements of this interrelationship as they stood in 1947 because, in the post-1948 era, synergy between land-use and transport planning would be expected to focus on the former and reduce the impact of the latter, if the two activities were to be working in harmony;
- an overview of the institutional framework under which the private railways were managed, including an analysis of the development of the role of the State with regard to the railway system and the control of land development, and the relationship between the two sectors;
- an analysis of the development of town planning ideology and railway management ideology with regard to the interface between the two sectors.

The sixth step in the development of the methodology was to study in depth the 1948-94 period, using the benchmarking exercise as a point of departure, and seeking to answer the questions summarised in figure 2. With regard to institutional arrangements, this showed that, although the railway system was State owned and the planning system was State operated, these activities took place in quite separate organisational domains; the central State and the local State. Conventional wisdom about the management of BR characterised the industry as centralised, hierarchical, introverted, traditional in outlook and production oriented². Although subject to political influence, this was very much at the national, as opposed to local, level and was direct from Government as opposed to any wider political process. The conclusion was that the industry was not sensitive to the changing characteristics of its spatial, economic and social contexts and that, as a nationalised industry subject to central political control, there was not an effective railway industry lobby seeking to defend the railway's interests and maximise its integration into the land development process. However, given what has been said already about the continuing significance of the rail mode, the research sought to test this conventional view. In particular, the aim was to identify those situations where the institutional relationships were more favourable, or where similar relationships were used in different ways as a result of the interplay of different personalities and/or local contexts.

Although a function of the central State with certain nationally derived policy priorities, with periodic outbursts of activity at the regional scale, town planning has been predominantly associated with local government and, as such, has been open to political influence through pressure groups and political parties. It would be expected, therefore, that the two sectors were managed largely in isolation from each other. But a brief review of the institutional arrangements for the railways and local government showed that they were dynamic, raising the question as to how and why they changed, how the changes impacted on each other, and what the outcomes were for the relationship between the sectors. As both sectors were governed by statute, it was important also to identify what the statutory requirements were with regard to interrelationships between them and how these changed over time.

A further methodological step, the seventh, which developed from this initial analysis of institutional arrangements, was the realisation that, owing to the creation of passenger transport authorities/executives and other factors, 1968 was an

² The term 'operator-driven' has been used to characterise British public transport generally.

important benchmark in the 1948-94 period. As a result, it would be analytically beneficial, and more practical, to handle the analysis of the period in two parts: 1948-68 and 1969-94.

With regard to policy, the review of the 1830-1947 period threw up a list of items which would be expected to be on the policy agenda if railway and land-use planning were intended to operate harmoniously, and which could be used to evaluate policy in the 1948-94 period. The initial policy research showed that the agenda for the railways has been characterised by a tension between the internal priority for the industry - how best to run the railway, and that imposed by Government - how to run the railway at minimum cost to the Treasury. The policy agenda for planning was dominated by the pressures exerted by various lobby groups; for social housing, private housing, commercial property development, farming and countryside protection and, with regard to transport, the road lobby. The fact that the railway lobby was neutralised through nationalisation meant that its cause was only taken up by proxy, by those on the periphery or outside the industry, typically when a route was threatened with closure or, later in the period under review, by the environmental movement. However, despite the generally negative implications of these factors, there were obvious examples of policies which had historical antecedents and which were aimed at producing synergy between the two sectors: the location of new towns along rail routes; the improvement of local rail services serving city centres; the resistance, until the 1980s, to out-of-town shopping centres; and the location of some major commercial redevelopment schemes at railway stations. The research aim was to put these into context and evaluate their weight, as compared with policies which were not focused on integration between the two sectors.

The final element of the initial approach to the research was concerned with the physical out-turn of the institutional and policy interfaces. The research focused on the location of development, the impact this had on the utility of the railway network and, in turn, the geography of the railway network and the impact this had on the nature and location of development. At the strategic level the research investigated the location with regard to the railway network of major blocks of new development such as new towns, town expansion schemes, over-spill schemes, major areas of suburban development, airport developments, and port developments, as well as the impacts of green belt policy. At the local level the research investigated the location and design of new development with regard to its precise interrelationships with the railway network, its stations and freight handling

facilities. As, during much of the period under study the railway network was in decline, research with regard to the disposal of redundant railway land and its after-use produced particularly important material from which to draw conclusions. This stage of the research reinforced ideas which had been developing about key themes which could be employed to analyse and explain the findings. This would make the thesis more than just an historical compilation, although that is of itself innovative and of value.

Three themes were selected: politics and political ideology; the influence of the professions and professional ideology; governance and management theory. This facilitated the eighth step in the development of the methodology, the creation of the overall analytical structure for the core of the thesis which is illustrated below in figure 3.

Figure 3: the analytical structure for the core of the thesis on the railway sector - planning sector interface: 1948-68 and 1969-94

Explanatory themes	Institutional arrangements	Policy	Spatial outcomes
Politics and political ideology	Analysis of relationships at three spatial levels: national, regional/sub-regional, and local		
Professions and professional ideology			
Governance and management			

Step nine in the development of the methodology was the decision to utilise a refinement of figure 3 to summarise progress with the analysis at the end of each chapter. This is illustrated in figure 4 with regard to the first chapter of this analysis, chapter three, and demonstrates how this tool enabled progress to be summarised and, by reference back to figure 3, benchmarked with regard to the position in the overall methodology.

Figure 4: the analytical structure to be utilised to summarise the analysis in each chapter: example for chapter three- Institutional Arrangements 1948-68.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology			
Professions and professional ideology			
Governance and management			

The core of the thesis was very broad owing to it dealing with a long time span, two sectors, and ranging over the national theatre. It was recognised at this stage of the development of the methodology that it would reinforce the product of the research if the analytical tools developed could be employed in a single area to show what was actually happening on the ground, in one place, continuously throughout the period. Such a case study could serve to 'ground' the whole exercise and add to the analysis by exploring the relationship between the general themes and outcomes identified in the main analysis, and the particular and unique forces at work in a given locality, on the understanding that these forces can work in both top-down and bottom-up ways. The decision to carry out a case study was the tenth element in the evolution of the methodology.

Whereas the chronological approach seemed best for the general analysis of the post-1948 period, it was not necessarily the best way to handle the case study. A significant characteristic of the research subject matter was the hierarchy of spatial domains within which the three dimensions to the inter-sectoral interface were interacting: these were the national level, the regional/ sub-regional (conurbation) level, and the local level. For example, at the national level the research was concerned with the locus within Government of railway planning and land-use planning, and the organisational structure for the railways and its relationship to the national structure for the operation of the land-use planning system. It was also concerned with the major thrust of policy for each sector and the out-turn with regard to the general geography of the railway network and interregional patterns of land development. At the regional and conurbation level, the research was concerned with the degree to which there was scope for institutional co-operation between the two sectors, whether there was evidence that the geography of the railway network was managed in ways to maximise its utility in the plans for decentralisation and urban regeneration, and the physical out-turn in terms of the relationship between the changing nature of the railway network and patterns of urban form. At the local level, the research was concerned with institutional arrangements for each sector, the local policy framework and the outcome in terms of the detail development of specific sections of the railway network and areas of land, and the interrelationships between them. The issue of surplus railway land and how it had been used was particularly noteworthy in this respect. The spatial dimension to the research was therefore a unifying theme which reflected the geographical thread running through it. The eleventh step in the development of the methodology was therefore the

decision to employ a spatially hierarchical, or 'embedded' (Nin, 1989, 50), approach to the case study.

The opening paragraph in this discussion of the research methodology stated that, because of the 'gap' in the literature, the research could not be approached with any preconceived hypotheses. However, as a result of the work undertaken in the previous eleven steps of the research, this gap had been narrowed significantly. The opportunity therefore arose to apply this knowledge and understanding drawn from the chronological analysis to the development of hypotheses which could be tested in the case study. This produced a crucial 'hinge point' in the overall thesis which was directly linked backwards through the chronological analysis to the research questions and, forwards, through the case study to the overall conclusions. As step eleven had produced the three spatial levels to the case study, step twelve was the decision to develop a hypothesis for each spatial level of the case study.

The thirteenth and final methodological step was selection of the Greater Manchester conurbation for the case study as it represented the 'critical case' (Nin, 1989, 47). Whereas London is the British city most influenced by railway development, it is a unique case. It will be shown in chapter two that the extent of railway development, and its impact on urban growth and decentralisation, varied significantly amongst the major provincial cities. Glasgow, for example, developed the most complex railway network which had a significant relationship with urban growth, whereas the network in Birmingham played a much lesser role than in any other major city, although its network exhibited features which, in the long term, became very advantageous. Liverpool was geographically a special case because of its coastal location which meant that it was only 'half a city' with its urban geography dominated by the riverfront. Manchester can be seen as a model conurbation in that it developed a complex railway network, but not as complex as Glasgow, and the city radiated out along it in all directions on the level plain of the Embayment. It will be shown that the network exhibited prototypical strengths and weaknesses and played a significant role in decentralisation. In the 1948-94 period there was a great deal of change to this network, of both a positive and negative kind; this took place in the context of extensive land-use planning activity which had identifiable impacts upon urban form. Manchester, therefore, presented all the right conditions for the case study.

The depth of the research in Manchester provided further opportunities to test the knowledge and understanding gained through submissions for publication: this was especially significant as Manchester was used in the submissions to exemplify the

Figure 5: the thirteen steps in the evolution of the research methodology.

1. Fixing the scope of the core of the research with regard to space and time: the main line railway network, and other systems as appropriate, and land-use planning in Britain between 1948-94.
2. Sketching out of key events with regard to the railway system and the land-use planning system between 1948-94 to scope the research.
3. Recognition of the need for research of the period 1830-1947 to create a base line for the core research and develop analytical tools.
4. Development and definition of the concept of the interface between the railway system and the land-use planning system utilising three dimensions: institutional arrangements; policy; and spatial outcomes.
5. Utilisation of the 1830-1947 research to benchmark the position in 1948 as a point of departure for the core research.
6. Utilisation of the three dimensions to the interface between the railway and planning systems to carry out an in-depth study of the 1948-94 period.
7. Acting on the product of initial core research to make the decision to split the 1948-94 period into two roughly equal parts, either side of the 1968 Transport Act.
8. Utilising the product of initial core research to generate three explanatory themes: politics and political ideology; the professions and professional ideology; governance and management.
9. Further refinement of the utilisation of the three explanatory themes to summarise and benchmark the analysis in each chapter.
10. The decision to carry out a case study to ground the research.
11. The application of a spatially hierarchical approach to the case study.
12. The development of three hypotheses for testing in the case study.
13. Selection of Manchester conurbation for the case study.

specific impacts and implications of general trends and relationships. The submissions tested the general understanding and the robustness of Manchester as a case study: both were published (Haywood, 1996 and 1998).

Finally, since the research commenced, the contemporary railway network which has enjoyed unprecedented growth since privatisation in 1996, and the further development of land use and transport policy to seek even closer integration between the two sectors (DETR, 1998), means that this research has been taking place during a period which is as historically significant as the previous epochs of integrated planning in 1947 and 1968. Railway privatisation also means that there is an historical resonance with the period before 1947. It is intended, therefore, that the output from the research should be of greater utility than just a backward looking analysis, however valid that may be. Just as the research has demonstrated that

conclusions about the relationship between the railway network, planning and urban form in the 1830-1947 period were of great value in evaluating the relationship in the era after 1948, so the product of this research has thrown up a set of items which should be on the contemporary policy agenda if the intention is to reinvigorate the railways and reinforce their role in the development of urban form as the Government and the railway companies intend.

Conclusions.

The step-by-step approach to the development of the methodology eventually produced a thesis with nine chapters in addition to this introduction. Chapter two reviews the 1830-1947 period, documenting the development of the railway system and its interrelationships with patterns of urban geography. The analysis draws particular attention to the role of the State, and the development of planning ideology and railway management practice with regard to their stance towards these interrelationships. The chapter concludes with a review of the strengths and weaknesses of the geography of the railway system and the development of a set of analytical criteria for the following analysis. Chapter three reviews the development of the institutional arrangements for the railway system and the planning system for the period 1948-68. This is followed by chapter four which reviews sector policy for the same period, and chapter five which analyses the spatial outcomes with regard to the interrelationships between the railway network and patterns of urban form as they developed over the period. Chapters six, seven and eight repeat this process for the 1969-94 period, and in each case the summary diagrams are used to benchmark progress with the analysis. Chapter nine is the case study of the Manchester conurbation and analyses the specific impacts of the interplay of the factors reviewed in the previous chapters as they crystallise in this conurbation.

The spatially hierarchical approach leads, firstly, to an analysis of the impact of national railway system and land-use planning priorities on the broad geography of the Manchester railway system and its macro relationships with the growth patterns of the conurbation. Secondly the analysis moves on to consider how regional, and particularly sub-regional, considerations impact on the development of the railway network serving Manchester's CBD and its relationship to the development of that CBD, especially with regard to patterns of development close to stations. The third element of the case study considers two local matters: the re-use of surplus railway land, and detail patterns of development in a high growth area on the outer fringe of the conurbation.

Finally, chapter 10 draws out the main conclusions from the whole analysis, considers the opportunities for further research, and identifies the overall implications for contemporary policy towards the railway network and the planning system.

CHAPTER TWO

THE RAILWAY NETWORK, URBAN FORM AND TOWN PLANNING : 1830 - 1947

The aim of this chapter is to develop a critical understanding of the geography of the railway network and its relationships with patterns of urban form, and to evaluate the degree of integration and/or dislocation between the two by 1947. The chapter will develop an explanation of these findings by reviewing: the development of political ideology concerning State intervention in management of the railways and the land development process; how professional ideologies with regard to railway management and town planning came to view the relationships between the two sectors. The chapter concludes with: consideration of how attitudes to governance and industrial management influenced the way in which the two sectors were structured at the start of the post-1948 period; a policy overview which will be used as a point of departure for the core of the thesis; and the production of a set of criteria to be utilised in the subsequent analysis.

The underlying rationale of the railway network.

Britain's population increased from 10.5m to 37m between 1801-1901 (Barlow, 1940), and this was mostly an urban phenomenon. The geography of industrialisation, so strongly associated with the coalfields and ports, was interwoven with that of the railway network. With the emergence of service industries after 1860 and the onset of urban decentralisation, the railway network became associated with central business districts (CBDs) and suburbs too. Country districts jostled for the attention of railway builders so that their products could get access to the burgeoning urban markets and, when travel for the working class became the norm, coastal resorts were tied into the network too (Simmons, 1986). The network radiated out from London and was dense in the major urban and industrial areas, but its tentacles reached out to all but the remotest settlements. Network mileage and the volumes of goods and passengers it carried, grew steadily throughout the period as shown in table 1.

The railways were built when *laissez-faire* was the dominant ideology: the initiative was with private commercial interests. The administrative mechanism was the Parliamentary Bill (Biddle 1990, 27-57), which on becoming an Act gave the promoting company the right to compulsorily purchase the line of route from existing landowners. The conflict of interest between the industrialists, who were promoting the railways, and aristocratic landowners was a point of serious political conflict in the early years and the focus of much parliamentary activity:

The power of horse and aristocrat was challenged by the railway but both learned to recognize an ally as well as a rival in its influence (Thompson,1963, 1).

Table 1: growth in railway network and traffic (Great Britain): 1870 - 1912

DATE	Length of line open for traffic	Millions of passengers carried	Tons of freight carried	Gross receipts (£m)	Working expenses (£m)	Net receipts (£m)	% of working expenditure to gross receipts
1870	13,565 a	322.2	166.5 b	42.9	20.6	22.3	48.1
1880	15,563	596.6	231.7	62.8	32.1	30.7	51.1
1890	17,281	796.3	298.8	76.8	41.4	35.4	53.9
1900	18,680	1114.6	419.8	101.0	62.5	38.5	61.9
1912	20,038	1265.2	513.6	124.0	78.4	45.6	63.2

a Mileage constructed; b - 1871

Source: Railway Returns, reproduced in Aldcroft (1968)

It is worth recalling that the birth of the railways came towards the end of the period of Parliamentary Enclosure of the open fields (Hoskins,1955; Shoard,1987), a process of ownership consolidation which was indicative of the power of the land owning classes. With regard to railway building, this was exercised to develop a complex statutory code which empowered the companies to acquire land, whilst protecting private property rights. In particular, railway companies could not retain land not required for operational purposes, known as 'surplus lands', and were thereby excluded from enjoyment of any betterment associated with its development. These matters were drawn together by the Land Clauses Consolidation Act of 1845 (Frend and Hibbert Ware, 1866) and came to be of great significance in the relationship between the railway companies and the housing reform and town planning movements which, themselves, became much concerned with the land development process. A side-effect of the power of the landowners was that development of railways had to be driven through by strong minded individuals who imposed their will on their opponents, colleagues and employees. This was a significant factor in the development in the industry of a tradition of centralism, hierarchialism and introversion (Vaughan, 1997).

In 1844, in reaction to the growing influence of the railway companies, W.E.Gladstone, the President of the Board of Trade and the embodiment of Liberal opposition to unbridled *laissez-faire*, promoted a Railway Bill¹. This attempted an extension of State intervention² in the industry but was fiercely resisted. The most

¹ During Gladstone's time at the Board of Trade he used the Select Committee on Railways and a railway board, under the Chairmanship of Lord Dalhousie, to develop public interest principles for the consideration of railway bills: these represent the first articulation of State railway planning and are set out in appendices one and two.

lasting feature of the subsequent Act was the provision for third class passengers to travel at a fixed rate of one penny a mile. This laid the foundation for the mass transit of the working classes which would eventually impact on the nature of urban development.

By 1845 the exploratory phase was over and trunk routes linking London with Birmingham, Liverpool, Manchester, Leeds, Newcastle, Bristol and Southampton were in place: railways were established as profitable enterprises. The defeat of Gladstone's attempt to manage network development meant that subsequently:

The Road was clear for the chaos of the Mania, for future construction of blocking lines by rival companies, and of hundreds of uneconomic branches..... (Ellis, 1960a, 155).

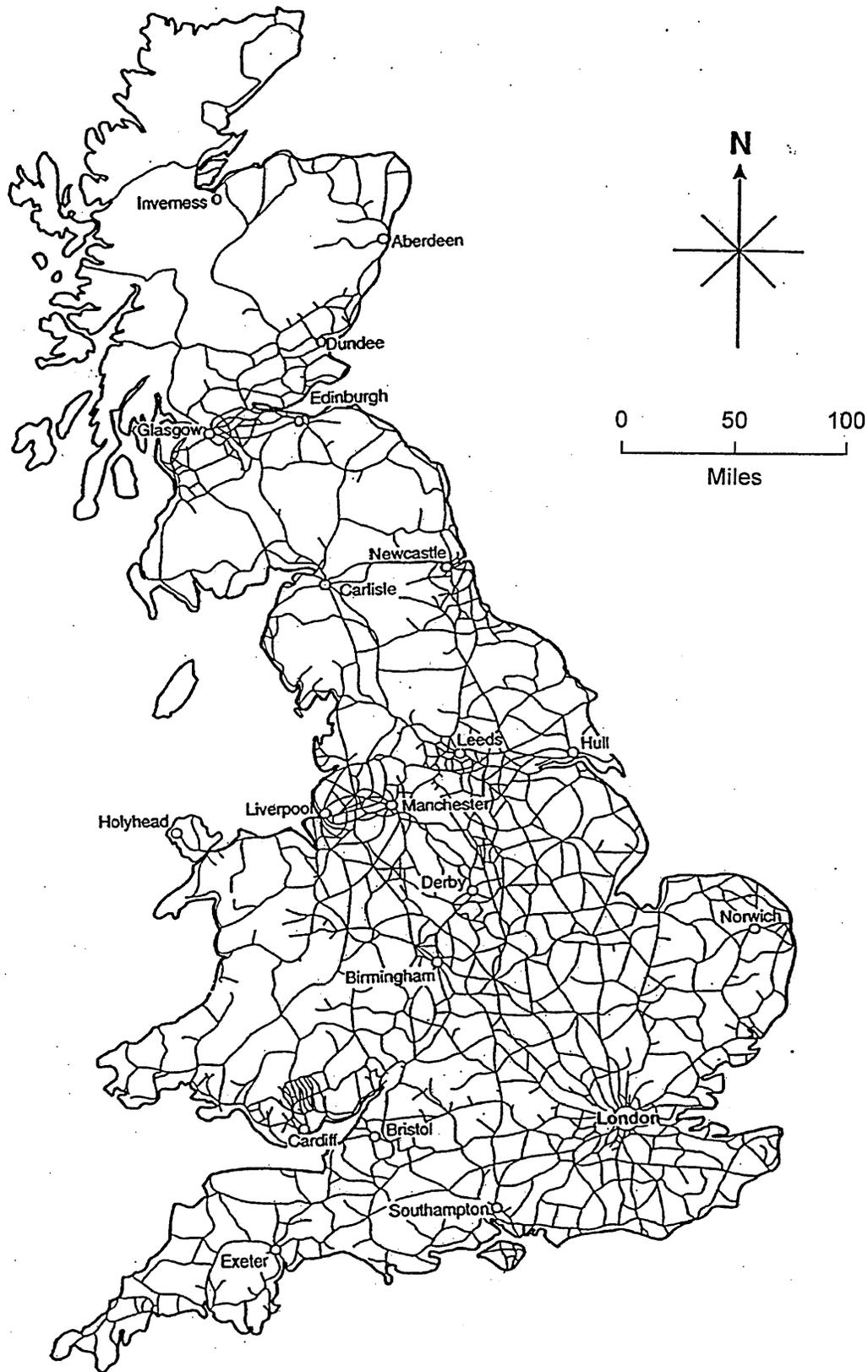
When the speculative bubble which drove the Mania burst it took a while for investment to recover, but between 1850 and 1875 some 8,500 miles were added to the network, giving a total of nearly 15,000 route miles. Mileage expanded right through to 1914 to give an eventual total of 20,000 miles (Freeman and Aldcroft, 1985) (figure 6). Most of the later additions were rural branch lines, often known as 'farmers lines' as they were built with locally raised finance³: few were profitable. Other branch lines were those which intensified the suburban networks around major cities. Beginning in 1863, the development of the London underground as a largely segregated system was a very special case of this: for the most part new suburban lines were conventional, surface running routes of the main line companies. It was not unusual however for landowners to offer inducements of various kinds to the companies to build lines to access their holdings so that they could be developed for housing; the provision of land for a station was typical (Jackson, 1999 a and b).

In the closing decades of the nineteenth century the 'water gaps' in the main line network were closed by some remarkable feats of engineering. Brunel had set the standard in 1859 with his innovative Royal Albert Bridge at Saltash, and the Severn Tunnel and Forth Bridge were worthy successors. The extremities of the network were completed by the opening of lines to Kyle of Lochalsh in 1897,

² This included provisions for nationalisation, although the preconditions were sufficiently complex for these never to be implemented.

³ By contrast local routes in France, known as 'Chemins de fer d'Interet Local' were built using local and national sources of public funds, only strategic routes, known as 'Chemins de fer d'Interet National' were privately funded, although even these were centrally planned.

Figure 6: the railway network 1914



Source: Biddle, 1990.

Padstow in 1899 and Mallaig in 1901⁴. The railway entered its Edwardian heyday and the emphasis changed to fine tuning with construction of 'cut-offs' (short cuts) typified by the last piece of main line railway built until the 1980s. This was the Great Western and Great Central Joint Line opened in 1906 between West London and Aynho Junction near Banbury, via High Wycombe (Edwards and Pigram, 1982), which shortened the Paddington-Birmingham route by 19 miles.

Laissez-faire meant that the mature railway network exhibited certain key characteristics. Route duplication was one: for example there were two between London and Exeter/Plymouth, two between London and Birmingham, and four between London and Manchester. Duplication extended to the lines between provincial cities: there were two between Manchester and Leeds, two between Manchester and Sheffield, and five between Manchester and Liverpool. There was route duplication at the local level too. On Clydeside, which developed the densest network outside London (Smith and Anderson, 1993), Barrhead had three stations and two routes to Glasgow, Renfrew had five stations and two routes, and Paisley had seven stations and three routes.

A second feature was that the focus on London meant that cross-country routes were usually engineered to a lesser standard only enabling journeys at slower speeds than on the main lines, with few through running trains⁵. The most notable exceptions included the York-Sheffield-Birmingham-Bristol route, Edinburgh-Glasgow, and the routes across the Pennines linking Liverpool and Manchester with Leeds, Sheffield and Hull.

Although the companies resisted State regulation, they did engage in planning to meet corporate goals. As the network developed, lines connected and companies developed common interests which led to the creation of the Railway Clearing House, in 1842 (Bagwell, 1968), which facilitated further co-operation. This produced horizontal integration: amalgamations to secure territorial supremacy, the maximisation of traffic and economies of scale, initiated by formation of the Midland Railway in 1844 with an empire stretching from York through Sheffield to Birmingham and Bristol. As parliamentary control over railway operation increased, amalgamations proliferated and, by 1870, 83 per cent of total railway revenue accrued to only fifteen companies (Freeman and Aldcroft, 1988, 33). The creation of

⁴ As an illustration of the growing involvement of the State in railway development in Britain, the lines from Strome Ferry to Kyle of Lochalsh and Fort William to Mallaig were financed by the Government for social/political reasons (Thomas, 1991, pp109-123).

large companies with ample resources led to a third characteristic of the network, duplication of facilities: if different companies had lines serving a particular city, each had separate passenger and goods facilities as increasing State regulation of prices restricted competition to quality of service. Duplication reduced network benefits and increased overheads.

Territoriality was associated with a fourth characteristic, gaps in the network at the interface between company territories: these typically occurred around city centres, where companies might approach from different directions. Because of the expense of making a connection across the city centre, probably by tunnelling, this was often never achieved: Manchester, Liverpool, Bradford and Glasgow were prime examples with London as a special case.

The railway system in the period 1914-39.

This period was a watershed for the railways as their dominance ended. Competition from tram and motorbus networks led to the reduction, or even complete withdrawal, of passenger services from some inner urban stations in most conurbations. Road haulage grew rapidly too and, as a deregulated industry it had the freedom to cherry pick the most profitable cargoes. In 1928 the railway companies were empowered to develop their own fleets of buses and lorries, which encouraged co-ordination between road and rail services, but the extent of this was limited. As road infrastructure developed and influenced urban form, the issue for the railway system was whether or not its operational role could be successfully adjusted to the new conditions, and whether its spatial integration with its markets would be successfully maintained.

During the Great War a Railway Executive Committee managed the railways as a unified system and significant economies were achieved (Aldcroft, 1968, 31). In 1919 the Ministry of Transport was established which suggested that railway nationalisation, was on the agenda. The companies fought against this and, instead, the 1921 Railways Act grouped them into the 'Big Four' in 1923: these had separate networks, giving them more or less geographical monopolies radiating out from London, and comprised the London Midland and Scottish Railway (LMS), the London North Eastern Railway (LNER), the Great Western Railway (GWR), and the Southern Railway (SR).

⁵ Bonavia (1995, 105) refers to the Oxford-Cambridge route which had the potential to facilitate 'cultural exchanges' between the two universities, whereas the reality was that these were usually effected via the waiting room at Bletchley.

Competition from the roads and loss of traffic associated with the Depression, meant that the railway companies had their backs to the wall. These difficulties and structural problems arising from the Grouping, meant that managements were pre-occupied with internal matters. Between 1920-38 the number of rail passenger journeys fell by 40 per cent (table 2), although passenger mileage increased by a small amount: but this was totally eclipsed by the increase in bus and coach travel (table 3). Freight tonnage lifted fell by 16.8 per cent and freight tonne kilometres decreased by 13per cent. Also the financial performance of the railway companies failed to live up to expectations as, although they remained in profit, net receipts were below those for 1913 for every year between 1923 and 1939. The decline of the railways, the growth of road traffic and the pursuit of integrated transport became the subject of both popular (The Times, 1932) and official (Hurcomb,1935) debate.

Table 2: British railways passenger and freight traffic: 1919-1938

Year	Passenger Journeys (1) Million	Freight Tonnes Million	Of Which Coal and Coke Million	Freight Tonne - kilometres Billion
1919	2,064	310	183	-
1923	1,772	349	226	31.0
1928	1,250	331	190	29.0
1933	1,159	255	168	24.6
1938	1,237	270	176	26.6

(1) Figures include free-hauled (ie. departmental) traffic on revenue earning trains

Source: DoT, *Transport Statistics*, London, HMSO, 1984

Table 3 Estimated number of passenger miles travelled by final consumers on public land transport in the U.K 1920-38 (m)

	1920	1929	1938
Railways	19,214	18,912	20,009
Tramways and trolleys	8,058	9,494	8,148
Buses and coaches	3,457	11,307	19,037
Taxis and hire cars	1,624	929	587
Horse drawn vehicles	216	63	13
Total	32,569	40,705	47,794

Source: Stone R., and Rowe D.A., 1966, *The Measurement of Consumers' Expenditure and Behaviour in the UK, 1920-38*, Vol. 2; reproduced in Aldcroft, 1968, 56.

Technologically the period saw refinement of steam locomotive design. Some suburban services were electrified, particularly on the Southern, and there was experimentation with the use of diesel power. But there was nothing like the development of main line diesel and electric traction as occurred in North America

where, by 1940, they were used to operate the majority of express passenger services (Allen, 1941). During the economic recovery of the late thirties there was competition for public attention through the operation of special express services, typified by the 'Silver Jubilee' and 'Cheltenham Flyer'. These earned the railways a place in the heart of the nation, but most services saw little improvement and most suburban services were typified by slow speeds and grimy carriages.

The handling of freight saw little change; even in 1939 it was based on wagonload traffic⁶ wherein wagons had to be shunted and re-shunted into different trains as they made their way from origin to destination, with goods getting damaged and delayed in the process. There was investment in automated marshalling yards at Toton, March and Feltham, and containerisation was introduced, but generally innovation in freight handling was limited. The traditional methods were very vulnerable to competition from road haulage and failed to build on the competitive advantage of railways: the ability to move large loads quickly over medium and long distances. The railways remained hamstrung by their common carrier obligation⁷ too; this was such a burden that the companies belatedly launched the 'Square Deal' campaign in 1938 to have it removed. The MoT was sympathetic but the outbreak of war prevented progress.

The Grouping improved efficiency; between 1928-38 the number of locomotives was reduced by 17 per cent, and the railway workforce was reduced from 735,870 in 1921 to 588,517 in 1939. Some companies, particularly the GWR, developed quite an extensive network of feeder bus and lorry services. But, generally, the heavy investment by the railway companies in bus companies⁸ did not lead to bus-rail integration, but to bus services complementing rail. One positive outcome was that companies⁹ became members of Joint Operating Committees with the local authorities who ran the municipal bus services, so that new bus services running into the towns could be properly co-ordinated with those running wholly within the towns. This was one of the few ways in which institutional

⁶ Wagonload traffic occurs where a train is made up of wagons having consignments with different origins and final destinations, so that marshalling is usually required at both ends of the trunk trip. Trainload traffic occurs where all wagons have the same origin and destination and no marshalling en route is required. The latter is clearly the most cost effective.

⁷ This was a duty laid on railway companies by parliament in return for the monopoly on freight transport which passage of a railway act bestowed on them: they had to accept for carriage any item submitted by a customer.

⁸ They had an interest in 47% of the 41,500 buses on British roads in 1931 (Aldcroft, 1968, 86).

⁹ This was a particular feature in the territory of the LMS

relationships were developed to embrace the railway companies and local authorities (Hellewell, 1996).

But generally, there was no fundamental innovation to create a base on which the railways could compete with road technology (Joy, 1973; Hamilton and Potter, 1985).

The relationships between the railways and urban form 1830-1914: the industrial districts.

Bulk freight haulage, particularly coal, was the underlying rationale of the network. In the coalfields the complexity and duplication of routes was remarkable: in the Welsh Valleys, for example, five companies with at least two or three routes in each valley served 72 collieries. The railways were also closely involved with development of the iron and steel industry, heavy engineering, town gas plants, breweries and the like. Industrial activity created demand for labour, leading to the development of industrial townships and demand for passenger services too¹⁰. As for the railway companies themselves, engineering complexes developed at Crewe, Doncaster, Swindon and their many counterparts. In the larger cities huge agglomerations of rail-served industries developed as around Stratford in the East End, or east Manchester and northern Glasgow (Kellett, 1979; Simmons, 1986). Large port complexes developed with their own internal railway systems: the largest was, of course, London, and all the major railway companies sought to gain access. In other areas specific ports were associated with particular companies, a notable example being the Great Central with Immingham.

So there was a close correlation between the location of industry and the geography of the railway network, although this is not to say that every factory was rail connected. Most were not and the short distance carting of raw materials and part-finished or finished goods was important in every industrial area.

The lack of control over urban development meant that industry was often associated with appalling environmental conditions. It was not uncommon for railway routes approaching city centres to be elevated on brick viaducts so as to avoid interference with street level traffic. Frequently these fixed the limits of city centres and, usually, they were associated with railway goods facilities, areas of noxious industry and sub-standard housing, as for example in Ancoats, Manchester (Kellett, 1979, 338). Concern over these triggered calls for State intervention and, through association, led to railways being seen in a negative light by those concerned with public health, housing and town planning, a point of view which was to persist:

¹⁰ That around Denaby and Cadeby Collieries in South Yorkshire was typical (Booth, 1990).

It was unfortunate that just at this period of lowest ebb in England's control of urban growth and when the onrush of town building was commencing, the Railways should enter upon the transport scene. Hailed as the prime symbol of industrial success and so armed with despotic powers, they became a new tyrant dominating our cities with much less regard to the general convenience than the old aristocratic planner (Abercrombie, 1944a, 81-82).

The relationships between railways and urban form 1830-1914: the CBD.

There was a close relationship between the growth of CBDs and railway traffic: railway companies were directly associated with hotels, warehousing, retail and office developments and, by 1890, were owners of up to 9 per cent of city centre land in the five biggest cities, and directly influenced the function of up to 20 per cent (Kellett, 1979, 318). The location of major railway stations became a factor of enduring significance because of the difficulties involved in altering their location, and the implications of this for their relationship with the CBD.

Competition between the railway companies for access to central London was particularly fierce: Parliament's policy of restricting surface railway construction produced the now familiar pattern of termini around the 'quadrilateral', leading to the need for movement between them to make cross-London journeys, and for access into the City and West End. The solution was a local, underground system and the first line, built by cut and cover techniques, opened in 1863. After encouragement by Parliament (SC, 1863, 1-2), this became the Inner Circle, completed in 1884. In 1890 came a new generation of electrically powered, deep 'tube' railways which traversed the quadrilateral rather than running around it. By 1907 they were linking new suburbs with the heart of the City and West End (Croome and Jackson, 1993) (see appendix 3 for chronology).

In the first decade of the twentieth century the street tramway networks, built under the 1870 Tramways Act, were being electrified so successfully that they took a slice out of London's inner suburban railway traffic because of their convenience for shorter journeys (Barker and Robbins, 1974, 159). The response of the railway companies was to develop their outer suburban services, but also they began to electrify their inner suburban services (see appendices 4 and 5): so despite competition, rail traffic continued to grow.

London's dominance of the urban hierarchy and the severity of its urban problems mean that it had paradigm status as a planning problem (Haywood, 1997). The railway network was a principal component of this: the debate about overcrowding, the need to provide land for commercial expansion, and the need to widen access to the suburbs, all hinged around the capacity of the network, with congestion throughout much of it indicating the stress it was experiencing. In the

absence of any State directed co-ordination, trains, trams and buses competed with each other. However, the more astute managers of the various private undertakings began to realise that there were commercial benefits to be gained from amalgamation, as exemplified by the creation of the Underground Electric Railway Company (UERL) in 1902. The work of Frank Pick (Barman, 1979), typified this: he developed a poster and branding campaign to promote the Underground as a network and, after 1912, when the Underground took over the London General Omnibus Company he:

.....began to develop feeder buses from the tube termini, on the model of Yerkes' original tramways plan. Within six months, with a new slogan "where the Railway Ends the Motor Bus begins" he more than doubled the number of routes, and extended the service area five times (Hall, 1988,64).

There was not prolonged competition by railway companies to penetrate deeper into the heart of provincial CBDs; the traffic potential was not there to make such huge investments viable. For the most part railway termini remained where they had been located from the outset, or re-established soon afterwards, with a general absence of tunnelling, either for main line railways or 'tube' lines. Termini generally were peripheral, so journeys had to be completed by a walk, or tram or cab ride. Notable exceptions were Glasgow, where bridges were built to bring lines over the Clyde into the city centre, and Birmingham, where lines from north and south were linked by tunnel with a large excavation to create the centrally located New Street station. Glasgow was the only provincial city to see construction of a circular tube railway under the city centre, and it also had standard gauge tunnels running east to west which allowed suburban services to deliver passengers closer to their final destinations¹¹. Liverpool also had an underground line linking the CBD with the Wirral.

The relationships between the railways and urban form 1830-1914 : suburban housing and town planning.

Even in London, where areas such as Richmond and Hounslow had lines by 1850, the initial pace of suburban development was slow (Dyos, 1973). However, suburban traffic was actively promoted by the companies from the 1860s and was associated with rapid inter-censal population growth in Outer London. Railway companies to the south and east (Jackson, 1999a and b; Kay, 1996) of London were much more interested than those bringing long distance traffic into north and west London, as the latter had little spare capacity. This affected the scale and

timing of suburban development and the nature of the railway networks. As the influence of the early town planning movement grew, the railways were associated with planned suburbs. Bedford Park was an example, with the most notable being the association between the arrival of the tube at Golders Green in 1907 and development of Hampstead Garden Suburb (Ikin, 1990).

Construction of lines to city centre termini usually involved demolition of much working class housing which was the cheapest to compulsorily purchase (Dyos, 1955; Kellett, 1979). Few of the occupants were rehoused by the companies, the majority being displaced into adjacent areas leading to more overcrowding: these negative impacts were well understood by Parliament (RC, 1884, 20). Political concern over the housing question grew under Gladstone's Liberals and Disraeli's new Tories as the ideological pendulum swung towards collectivist and interventionist strategies (Black, 1969). This produced various statutes which are seen as part of the ancestry of modern town planning (Ministry of Town and Country Planning and Department of Health for Scotland, 1950; Ashworth, 1954; Cherry, 1974, 1988; Lawless and Brown, 1986).

Despite the legislation the housing problem remained (Cherry, 1988, 44), but reformers saw a solution in facilitating access to better housing on cheap suburban land through cheap rail fares. The first statutory provision was in 1861 (RC, 1884, 49) but mass access to London's railways did not arrive until the Cheap Trains Act of 1883; 'the twopenny fare brought an entirely new travelling public on to the railways' (Dyos and Aldcroft, 1971, 219) and the growth of working class suburbs accelerated, typified by those in the East End such as Walthamstow. By the turn of the century the debate around the housing problem intensified (Cherry, 1988, 49); Charles Booth led the movement which saw 'improved means of locomotion', particularly that provided by railways (Booth, 1901, 15-17) as the best way of increasing access to the suburbs. Some observers saw that if the railway companies were allowed to combine land and railway development a solution could be found to the housing problem and the associated need to expand railway services, by using development profits to subsidise rail travel (Perks, 1906).

The growing impact of the town planning movement was reflected in the promotion by Asquith's Liberal government of the 1909 Housing and Town Planning Act. Although only enabling legislation, a number of schemes were prepared and submitted to the Local Government Board for approval before 1914. These included

¹¹ Travel along the north-south axis continued to demand travel by road across the CBD between Central/St Enoch and Queen Street/Buchanan Street.

several examples of railway suburbs, typified by those for the Ruislip-Northwood estate in north west London, alongside the Metropolitan Railway's lines from Baker Street (Thompson, 1913, 133 and 139).

Although undoubtedly railways did influence the patterns of suburban development in provincial cities, their smaller size meant that, generally, the impact was much weaker than in London and was very variable. For the majority of people, the main methods of getting around were walking, trams and omnibuses. Nevertheless, Glasgow saw development of a dedicated suburban railway, the Cathcart Circle, and the tunnels under the CBD built in the 1890s improved access to the industrial complexes down the Clyde, typified by the Singer works which had its own railway station. Services extended out well beyond the built-up area as far as Helensburgh, Balloch, Milngavie and Wemyss Bay. Manchester developed such classic commuter settlements as Hale, Altrincham, Wilmslow and Alderley Edge, (Hodson, 1971). In Birmingham the suburban developments in Sutton Coldfield were linked with the CBD by the 'Cross City Line' (Boynton, 1993)¹², but rail commuting was less important in Birmingham than in any other city of comparable size (Cherry, 1994, 70). Nevertheless, its network can be regarded as a model of good practice and will be revisited in the core of the thesis: two well located main stations with cross-city lines running in tunnel under the CBD, efficiently linking the outer suburbs and industrial towns with the regional centre¹³. Overall the most striking characteristic of railway development in provincial cities was its variability. This was well illustrated by Nottingham and Leicester; within 5 miles of central Nottingham there developed 35 stations, whereas within the same distance of central Leicester there was only 21 (Simmons, 1973, 289-299; Marshall, 1986).

The relationships between the railways and urban form 1919-39.

The inter-war years were marked by the development of the National Grid which freed industry from dependency on rail connections to supply coal. The growth of road haulage increased this locational shift away from the railways. However, new industries were developed which required rail haulage, such as iron and steel

¹² The importance of the link between a railway suburb and its CBD was nicely demonstrated by the case of the Birkenhead to Hoylake railway opened in 1866. Initially this brought little growth to Hoylake but, in 1888, a connection was made with central Liverpool via the new tunnel under the Mersey. Hoylake grew from a population of 3,722 in 1881 to 14,009 in 1911.

¹³ The Cadbury's model settlement of Bournville, with its own station and freight facilities (Hitches, 1992), was on the West Suburban Line and planning schemes were prepared under the 1909 Act for Quinton, Harborne and Egbaston in association with the Harborne branch line (Sutcliffe, 1981, 84).

manufacture at Corby. As a response to the structural decline of traditional industries, 'trading estates' were developed and were all rail connected. Examples included Park Royal, Slough Estates, Trafford Park, Treforest, the Team Valley and Hillingdon. So, despite the general erosion of rail's association with industry, the outcome of change was not wholly negative.

Political unrest during the Great War led to Lloyd George initiating the 'Homes Fit for Heroes' campaign (Swenarton, 1981), implemented by the 1919 Housing and Town Planning Act. Perhaps the best known of the council housing schemes developed under this was that by the London County Council (LCC) at Becontree, in east London. Construction started in 1920 and; 'By the end of the thirties, its population had reached about 116,000, accommodated in 25,769 dwellings' (Jackson, 1991, 235). Despite the obvious need and potential for integrated land-use and transportation planning by building on such a scale, this took a long time to be realised, and only then by the Underground. This lack of railway connections to new council housing was not untypical; Manchester's Wythenshawe and Liverpool's Speke were similarly left off the railway network. It was significant that from around 1900, the municipalities developed their own tram and bus services and that the importance of linking council housing schemes to these had been emphasised by the Tudor Walters report.

Despite the intensity of local authority house construction, three quarters of the 4 million houses built between 1919 and 1939 were erected by private builders. Because of imbalances in regional economies, most were in the Midlands and South East, particularly around London. It was here that concerns increased over loss of farmland and the failure to produce balanced settlements with community facilities and employment. Improving motor bus services led to 'ribbon development' along arterial roads: this became the subject of particular criticism and statutory control under the 1935 Restriction of Ribbon Development Act.

There were some notable exceptions to the relatively declining role of the railways, particularly around London, where railway companies were centrally involved in suburban growth. The Metropolitan Railway Company had underground lines in central London and a surface extension out to Aylesbury, opened in 1892, and was unique in circumventing the general ruling that railway companies should not be involved with land development (Jackson, 1986). Electrification out to Uxbridge was complete by 1905 and, by 1914, development on surplus lands had commenced at Pinner. In 1919, in order to provide a more legally watertight basis for its development activities, the Metropolitan set up the Metropolitan Railway Country

Estates Company (MRCE) and marketed its developments under the banner of 'Metroland' (Edwards and Pigram, 1979, 1988; Jackson, 1991). This was a significant contribution to the massive population growth in Middlesex which experienced 'five times the (percentage) increase for England and Wales, and the highest recorded for any county' (Cherry, 1988, 95).

The MRCE encountered no serious opposition to its activities but other railway companies did not follow suit, despite the Metropolitan's call for general legislation to enable them to do so (Selbie¹⁴, 1921). Nevertheless, south of the Thames the Southern demonstrated that they had a common interest with developers and this acted as a spur to the improvement of services. Booth and his associates had recognised that:

Inner South and Outer South London are like two cisterns, the one brimming over and the other empty; a junction pipe is all that is needed to redress the level in one, and make the other serve a useful purpose (Browning Hall, 1902).

Electrification and construction of new routes were the answer, with the added bonus that removal of dirty steam trains made the system more attractive to passengers. Appendix four shows that, under the intelligent management of Herbert Walker (Klapper, 1973) the Southern electrified the routes out as far as Orpington, Sutton, Dorking, Guildford and Windsor by 1930¹⁵. Subsequently electrification reached the South Coast allowing the introduction of that most famous commuter train, the Brighton Belle. The attendant suburban growth (Jackson, 1999) led to massive increases in the numbers of passengers carried (Haywood, 1997). Over a third of the new stations opened in the London area after 1919 were on the Southern and almost all of them enjoyed subsidy from developers (Bonavia, 1987; Jackson, 1991: pressure from landowners was associated with new Southern branch lines too (Jackson, 1999b). The Southern actively promoted the usage of its trains to access the new suburbs and produced a free 'Residential Guide' from 1926 onwards (Jackson, 1999a and b).

After 1918 Pick began to pursue the sort of strategy for the Underground endorsed in professional journals;

The electric railways in the north of London are becoming congested and new direct railways from the north-west to the south-east and the north-east to south-west through central London, pivoting on Piccadilly Circus, are a necessity. These lines should be constructed on a high speed basis of average speeds of at least 25 m.p.h., with stops not more than one per

¹⁴ Selbie became general manager of the Metropolitan Railway in 1908 and promoted electrification and extension out to Harrow. He initiated the Metroland marketing campaign and formation of Metropolitan Railway Country Estates Ltd.

¹⁵ Bonavia (1987, 83) refers to the marketing slogans used by the Southern: 'Live in Surrey, Free from Worry' and 'Live in Kent and Be Content'.

mile, with interchange facilities where they bisect the slower lines and with omnibus and tram services to feed the comparatively widely separated stations (Thompson, 1922, 114).

New tunnels under central London were not financially viable so the Underground built surface extensions of existing lines out into green fields (appendix three) thereby spawning new suburbs, and rail catchment was maximised by integration with feeder bus services. When London's public transport was taken into public ownership under the London Passenger Transport Board (LPTB) in 1933, the New Works Programme was launched with a budget of £40 million: this was facilitated by the Government underwriting the necessary loans as part of its anti-unemployment strategy. Most of the work was completed before being curtailed by the War (appendix 3) and facilitated further suburban growth, public and private:

The Edgware, Cockfosters and Stanmore extensions, and the tube routes to Uxbridge and Hounslow.....traversed areas that were quickly covered with private enterprise housing,.....and of course the Edgware line also served the big LCC estate at Watling (Jackson,1991, 190-192).

The LPTB was also notable for its success in co-ordination of the design of stations, rolling stock and promotional literature. Pick, who had become the LPTB's Vice Chairman, was influential in this field and had long recognised the commercial importance of the attractiveness of stations and a good public image of the system:

... if the cinemas were temples of entertainment, the Underground stations were the temples of travel. Frank Pick, Vice-Chairman of the Underground Group, had called his stations 'inviting doorways in an architectural setting that cannot be missed by the casual passer-by'. To live near an Underground station was considered by many people to be the 'acme of convenience' (Edwards and Pigram, 1986, 17).

Stations such as Arnos Grove on the Piccadilly Line extension to Cockfosters¹⁶, with their integrated bus facilities, were widely acclaimed as models of transport provision. As on the Southern, the stations were frequently part of a suburban node which comprised shopping parades and other local services too. The only improvements in provincial cities which approached this were electrification of the Manchester to Altrincham line and the Mersey Railway to West Kirkby on the Wirral. Even in London, one of the densest commuter flows, that through Liverpool Street, remained steam hauled.

Interventionism in the railways and town planning.

Despite the failure of Parliament to take strategic control over the development of the railway network, it was inexorably drawn into the industry's affairs. The fact that, initially, railways were built to different gauges was an obvious

¹⁶ The Southern Railway too became widely recognised for excellence in the design of some of its new stations (and signal boxes) which employed the modernist 'Southern Odeon' style.

shortcoming which would undermine network benefits. The major variations were Stephenson's gauge and Brunel's 'broad gauge': in 1846 the Gauge Act was enacted, despite Brunel's vigorous opposition (Vaughan, 1991), whereby Stephenson's 'standard gauge' was adopted for all future construction¹⁷.

The railways had powerful opponents amongst the traders who wanted goods carried at the lowest price and equitable treatment as compared with their competitors. Despite the common carrier obligation, 'railway rates' became the dominant transport issue. The traders wanted a transparent set of rates which all the companies would have to adhere to with no display of 'undue preference' between customers. This was eventually put in place by the Railway and Canal Traffic Act of 1894 (Dyos and Aldcroft, 1971) and effectively ended competition on price between railway companies.

Parliament was also concerned with safety. The records of the Railway Inspection Department of the Board of Trade go back to 1840 (Rolt, 1998) when it was given the power to delay openings if the required standards were not met. As traffic became denser serious accidents occurred: debate around the causes focused on signalling, lack of brakes on rolling stock, and railwaymen's excessive hours of work. The drift of public affairs meant that, by the 1900, legislation was enacted covering all these areas¹⁸ and the State was involved in enforcement (Bagwell, 1968; Dyos and Aldcroft, 1971). The growth of safety culture was another source of the introversion and hierarchical discipline which characterised the industry.

There was an external issue which the State was drawn into from a very early date which was directly related to the development of town planning: the impact of railway construction on public amenity. In the provinces extensive destruction of historic buildings occurred, such as the severance of Newcastle's mediaeval castle. Intrusion did not always evade critical comment: in 1840 Ruskin bemoaned construction of the Midland Railway through the beautiful Wye Valley in Derbyshire:

every fool in Buxton can be at Bakewell in half-an-hour, and every fool in Bakewell at Buxton, which you think a lucrative process of exchange - you fools everywhere (Cook and Alexander, 1903-12, 86-87).

¹⁷ The gauge debate was focussed around the width between the rails and not the 'loading gauge', the vertical clearance under bridges and tunnels, which in Great Britain was very low by comparison with Continental railways: this came to be a problem after 1948.

¹⁸ Brakes capable of being operated by the engine driver at the front of the train were only made compulsory on passenger carriages, not freight wagons, a shortcoming which limited the speed of freight trains and was eventually to become a serious weakness vis-à-vis road haulage.

In London, owing to the longstanding 'Spirit of Improvement' (Summerson, 1962) the companies had a much more difficult time as a Royal Commission (RC) (RC, 1846) came down firmly against penetration of surface railways into the central 'quadrilateral'. The matter was picked up in the 1860s by a Select Committee (SC) which encouraged the development of a diversionary orbital route, particularly in East London to serve the docks (SC, 1863, 2). However, this was built on a piecemeal basis, the biggest omission being a link under the Thames to the east of Wapping¹⁹. The only exception to the restriction on railway construction across central London was the link between Blackfriars and Moorgate via Snow Hill tunnel, opened in 1866. This was the final thrust in a long battle between the companies serving south London to outflank each other in gaining access to the City and West End. This produced the series of termini along the Thames: Victoria, Charing Cross, Blackfriars (originally St Paul's), Cannon Street, Waterloo and London Bridge. These were accessed by miles of brick arch viaducts which, along with bridges over the Thames, attracted contemporary criticism (Wilson, 1866; Haywood, 1997).

Elsewhere, in 1883 the successful campaign to prevent construction of the Ennerdale Railway, led by Canon Rawnsley, was instrumental in the formation of the National Trust and was the culmination of a long struggle to protect the Lake District by the group which included Wordsworth, Ruskin and Morris (Wheeler, 1995). Opposition to railway construction became increasingly sophisticated and, by 1914, the town planning movement was able to develop a detailed and successful environmental case against the proposed Northern Junction Railway, an orbital route in north west London. However, the North Circular Avenue which was proposed at the same time by the Traffic Department of the Board of Trade and would run roughly parallel to this railway, did not come in for similar criticism (Reade, 1913). This imbalance by planners in their attitude towards the environmental impact of roads and railways was something which came to characterise British planning.

By the 1890s Parliament had become so entwined with railway management that it became difficult to see where Government ended and private enterprise began. There was a growing lobby of those who wanted this to develop to its logical conclusion - nationalisation, which would allow operation as a unified network wholly

¹⁹ This outcome contrasted with the situation in France and Germany where, owing to military considerations, the State was centrally involved in the development of railway networks; construction of the orbital Ceinture around Paris was completed by 1867 with a similar line around Berlin completed by 1877.

in the public interest. The Society for Railway Nationalisation was formed in 1895 and the case was fully articulated and written up by 1898 (Edwards, 1898). By 1912 the leading contemporary railway economist was of the view that:

The conclusion, therefore, that I most reluctantly arrive at is that we cannot go on as we are, that there is little hope for the establishment of an adequate and clearly thought out system of State control, and that, therefore, the only alternative - State ownership - is inevitable (Acworth, 1912, 9).

Popular concern about transport problems in London led, in 1903, to the appointment of the Royal Commission on London Traffic with a study area of up to 15 miles from Charing Cross. Their report was a milestone with regard to its articulation of the relationship between the railway network and urban form, and the policy recommendations for its further development. Tables 4 and 5 reproduce evidence submitted by the Statistical Officer of the LCC which contained very useful summary measures of network characteristics. This is the sort of data which, in subsequent years, one would expect to find in land-use and transportation plans if the aim of State planning was to integrate land-use planning with the railway network.

The Royal Commission recognised a number of features of the network and its relationship with urban form as worthy of attention:

- the general geographical characteristics of urban railway networks including features such as route duplication and strategic gaps;
- the precise alignment of railways with regard to urban geography;
- the timing, frequency and cost of passenger services along the component parts of the network;
- the spacing and catchment of stations and the density of development around stations;
- the precise location of stations with regard to passengers' destinations;
- the design of stations and their aesthetic relationship to other elements of the urban environment;
- the relationship between railway lines and the location of new development and the cost of railway services to such development;
- the relationship between railway services and other urban transport modes.

The report showed that *laissez-faire* had been replaced by recognition of the need for planning and effective institutional arrangements, recommending the creation of a 'Traffic Board' (1905, 97), the precursor to the London Passenger Transport Board. The report also endorsed more interventionist mechanisms for the

Table 4 : Number of stations in Greater London - according to sections.

Section	Number of Stations			Number of Stations per Square Mile			Number of Inhabitants per Station		
	In Administrative County of London	In 'Extra London'	In 'Greater London'	In Administrative County of London	In 'Extra London'	In 'Greater London'	In Administrative County of London	In 'Extra London'	In 'Greater London'
Western	53	60	113	3.14	.38	.64	15,603	7,001	11,036
Northern	70	55	125	3.52	.43	.84	16,332	7,582	12,482
Eastern	46	51	97	3.62	.34	.90	17,747	13,241	15,378
Total, north of the river	169	166	335	3.42	.43	.77	16,489	9,111	12,833
South-eastern	60	47	107	1.46	.45	.74	13,964	6,294	10,595
South-western	46	43	89	1.78	.48	.77	19,761	5,576	12,908
Total, south of the river	106	90	196	1.59	.47	.76	16,480	5,951	11,645
Grand Total	275	256	531	2.36	.44	.77	16,485	8,000	12,394

Table 5 : Length of railways in Greater London - according to sections.

Section	Length of Railway in Route Miles			Length per Square Mile			Population per Route Mile		
	In Administrative County of London	In 'Extra London'	In 'Greater London'	In Administrative County of London	In 'Extra London'	In 'Greater London'	In Administrative County of London	In 'Extra London'	In 'Greater London'
Western	35.3	100.1	135.4	2.09	.63	.77	23,427	4,196	9210
Northern	43.7	67.3	111.0	2.20	.52	.74	26,161	6,196	14,056
Eastern	26.6	65.3	91.9	.99	.69	.85	30,691	11,524	16,231
Total, north of the river	105.6	232.7	338.3	2.11	.61	.78	26,388	6,692	12,707
South-eastern	66.7	86.4	153.1	1.62	.84	1.06	12,582	3,424	7,404
South-western	49.3	58.9	108.2	1.91	.66	.94	18,438	4,071	16,617
Total, south of the river	116.0	145.3	261.3	1.74	.75	1.01	15,059	3,686	8,735
Grand Total	221.6	378.0	599.6	1.90	.66	.86	20,458	5,516	10,976

Source: Mr Harper, Statistical Officer of the LCC, Royal Commission on London Traffic, Vol 111, Appendix No 6, , p160, Table 31.

provision of cheap fares to ensure that the railways made a bigger contribution towards solving the housing problem; these included local authority subsidies and railway companies being allowed to engage in land development.

Despite these recommendations, action by Parliament was minimal and, with regard to town planning, only produced the permissive 1909 Act. It took the upheaval

of the First World War to trigger more radical measures as has been outlined above. With regard to the railways this produced the Grouping which ‘...brought to a logical conclusion the trend towards concentration in the late nineteenth and early twentieth centuries’ (Aldcroft, 1968, 41). The most complex part of the 1921 Act was that which dealt with rates and charges which, notwithstanding the new competitive environment, continued the nineteenth century regulatory tradition, including the common carrier obligation. Rates were fixed at a level to yield an annual net revenue, known as the ‘standard revenue’, equivalent to that of 1913. However prices were still related to the value of the commodity being carried rather than costs, which meant that the railways still knew little about the real costs of carrying different kinds of traffic (Aldcroft, 1968, 45). However, their new competitors in the road haulage industry had a much clearer idea and used it to cherry pick the most profitable traffic. The Grouping deflected the attention of the MoT away from the railways, perhaps permanently (Council for the Protection of Rural England, 1992) and it focused on the growing bus and road haulage industries and development of the road network. The Ministry did respond to growing public concerns about road safety, pricing regimes and unfair competition for the railways, by regulating the bus and road haulage industries under the 1930 Road Traffic Act and the 1933 Road and Rail Traffic Act²⁰. The latter gave the railway companies some rights to object to the granting of licenses to road haulage companies. A particularly significant development was the 1936 Trunk Roads Act which, for the first time, gave a central government ministry the duty to develop a strategic transport network.

With rising road traffic, London’s traffic problems worsened and the large, private transport companies were a focus of intense political debate over the conflicts between private profit and public interest. As the Labour Party gained political influence, some of its leading members developed the case for public ownership (Morrison, 1933). This came to pass in 1933 under the National Government which replaced MacDonald’s first Labour Government, and the LPTB took over all London’s trams, buses, the Underground, the Metropolitan Railway and MRCE.

During the Second World War the railways were again placed under the control of the Railway Executive Committee (Aldcroft, 1968). There was a moratorium on investment and a huge increase in traffic carried. The railways

²⁰ A Royal Commission on Transport was appointed in 1928 to consider issues surrounding the growth of unregulated bus and road haulage services and the Road Transport Act was passed as a result of its endeavours, even before their final report was published in 1931.

suffered extensive bomb damage and were stretched to breaking point. The network emerged with a huge investment backlog (Pearson, 1967). The end of the war was marked by a rapid fall off in traffic and the availability of ex-army lorries and drivers meant that, despite a large increase in costs, the railways could not raise prices too much without fear of losing traffic.

Once the wartime emergency passed, the two main political parties renewed hostilities and a debate around nationalisation was firmly on the agenda. However, the rhetoric tended to mask the deeper issues with regard to the future of the railways: matters such as the appropriate balance between road and rail transport and how they could be best integrated; what form modernisation should take; and the relationship between the network and patterns of urban development. Once Attlee's Labour Government was returned in 1945, nationalisation was inevitable.

Accelerated suburbanisation in the inter-war period, facilitated by new transport technologies, stimulated the debate about town planning. Although 928 planning schemes had been drawn up by 1930 under previous planning legislation, these were limited spatially and were unable to effectively manage suburbanisation (Pepler, 1931). The 1932 Town and Country Planning Act consolidated all previous legislation and extended the powers of the local authorities to produce planning schemes for any land, although the powers were enabling rather than compulsory. Nevertheless, many local authorities drew up planning schemes which sought to limit suburban growth, but still these were ineffective as the right to develop remained with the landowner and, if a local authority sought to restrict this, it would be liable for compensation payments for loss of betterment. When faced with this councils backed down and development took place (Hall, 1990). The situation around London was so serious that the LCC promoted the Green Belt (London and Home Counties) Act in 1938 to facilitate the retention of open land for recreation.

The Blitz had a major impact on the planning debate as the destruction meant that the task of rebuilding was so great that only the State would be able to manage it. This provided the political stimulus for further intervention. In addition, the potential of planning to produce homes for all, typified by garden cities, created a wave of popular support for town planning. Thomas Sharp's *Town Planning* was published in 1940 and sold 1/4 million copies (Cherry, 1974, 130). This changed political context meant that consideration was given to the thorny problems of property rights, land values and betterment (Ministry of Works and Planning, 1942). The election of the Attlee Government in 1945 added a new dimension, as its commitment to the Welfare State meant that there would also be a need for sites for

the new schools, colleges, hospitals and so on which would be its physical manifestation. The new government passed the New Towns Act in 1946, followed by the 1947 Town and Country Planning Act which became effective from July 1st 1948.

Planning ideology and the railway network.

Given the association between the social housing movement and 'improved locomotion', it is hardly surprising that those who first articulated town planning ideology should have had a perspective on the railway network. However it was the overall design of the built environment which was central to planning ideology, not its specific relationship with transportation systems: the infant profession was dominated by architects. Howard (1898) saw the solution to the problems of the big cities as out-migration to free-standing towns. As people would move by public transport between the various settlements within the 'social city', there was a need for a planned relationship between walking, electric trams and railways:

Those who have had experience of the difficulty of getting from one suburb of London to another will see in a moment what an enormous advantage those who dwell in such a group of cities as here shown would enjoy, because they would have a railway system and not a railway chaos to serve their ends (Howard, 1985,107-108).

It was no coincidence that Letchworth and Welwyn were located on a main line. However, despite this generally positive stance, Howard's schema marked the beginning of the divergence between planning ideology and the interests of the railway system as there was an implicit assumption that demand for regular travel would reduce substantially. By 1913 he had developed a more explicit critique of the social costs of commuting (Howard, 1913).

Much of the debate about the advantages of garden city housing was carried out at a fairly generalised level; but Unwin used his architectural skill to examine the comparative costs of by-law and garden city housing. He was aware that an argument against building at lower density was that it would lead to an unacceptable increase in travel costs, but countered this by a simple argument:

... the fact that the area of a circle increases not in proportion to the distance from the centre to the circumference but in proportion to the squares of that distance, it follows that the increased radius required to give an area sufficient each year for a given increase to the population of a town is a rapidly diminishing one.....

It will be seen, therefore, that the total additional distance to be travelled as a result of preventing overcrowding is a comparatively unimportant matter..... (Unwin in Creese, 1967,121 and 123).

Unwin's arguments about the viability of lower densities were reinforced by those about allowing railway companies to become involved in suburban

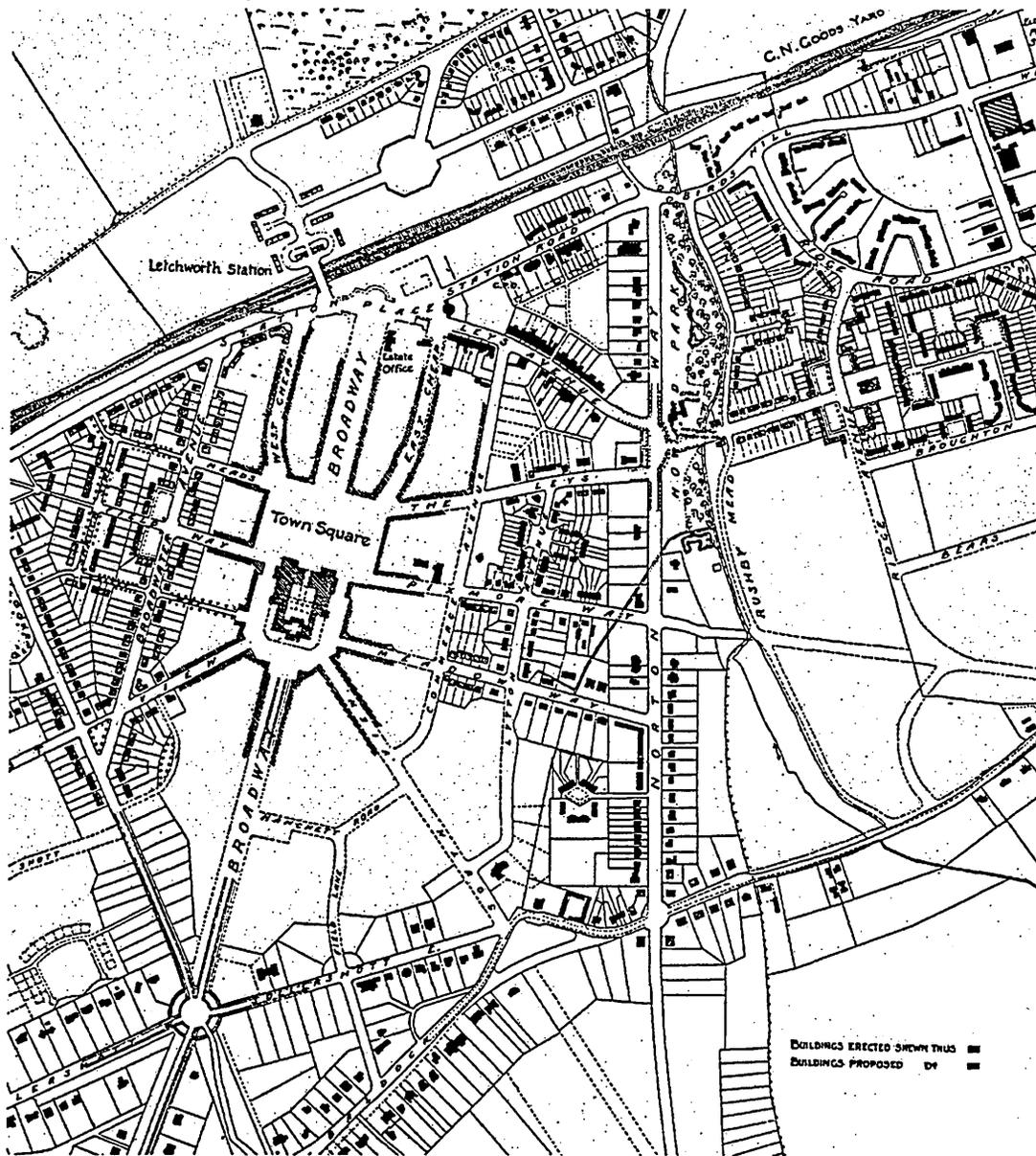
development in return for cheap fares. Unwin was critical too of the location and design of railway stations (1909, 173) and described how station approaches should be integrated with city centres²¹; his design for the town centre in Letchworth utilised the railway station as a focal point (figure 7).

Although after 1919 statutory planning was still focused on housing, a new form of planning emerged, regional planning, initiated by Patrick Geddes. Broad, geographical analysis enabled him to appreciate the extent of urban decentralisation and coalescence, and he coined the term 'conurbation' (Geddes, 1915) to describe it. His analysis led him to the view that environmental problems had to be tackled strategically; his ideas fell on fertile ground as the Depression produced widespread dereliction. Also, even before 1914, there was a realisation that the road system needed to be improved and that this could only be achieved by planning strategically (Pepler, 1931). Regional planning was potentially beneficial for the railway network which needed rationalising and its future utility depended upon its continuing integration with urban form. However, rail access was not a priority in contemporary regional planning ideology: the main issues were economic restructuring; land for housing; and the protection of agricultural land. The main transport issue was road planning. Regional planning schemes were produced through joint committees of local authorities and, generally, the railway companies were not involved (Abercrombie, 1923; Abercrombie and Johnson, 1923).

The regional problem and the furore over unrestrained suburban growth led to louder calls for State intervention. In 1937 this culminated in the appointment of the Royal Commission on the Geographical Distribution of the Industrial Population, the Barlow Commission, which served as a focus for debate about the relationship between railway development and the growth of London. Pick gave extensive evidence which revealed that, despite being a supporter of town planning (Pick, 1927), his opinions were fundamentally different to those of the planners. He dissented from the Commission's view that the growth of London was a 'national menace' and questioned their terms of reference which spoke only of its 'strategic disadvantages' (Barlow, 1940, 1). Pick thought that London should continue growing to accommodate up to 12 million people inside its green belt, and that the efficiency of the transport network should govern its size, the key factors being the cost and

²¹ Although the railway companies had built many grand stations, typified by Paddington, St Pancras and Bristol Temple Meads, typically these were not integrated into grander set pieces of civic design. The North Staffordshire Railway's Stoke on Trent station was unusual in this respect as it was part of a square, the other sides of which were made up by the railway company's hotel and housing for railway workers, all built in a unified style (Biddle, 1986).

Figure 7: Unwin and the station place.



Source: Unwin, 1909.

time of travel:

The conclusion from these two approaches to the problem is broadly, so far at any rate as the centrifugal movement of the population is concerned, that London cannot become fully developed beyond a zone stretching roughly 12 to 15 miles from the centre (Pick, 1938,358).

Frederic Osborn gave evidence on behalf of the Garden Cities and Town Planning Association and did not see Pick's data on per capita growth in journeys as indicative of an improving quality of life:

Industrial techniques shorten hours, and this ought to mean more leisure. But in the great towns much of the released time gets used up in longer travelling - a fantastic way to waste the benefits of progress (Osborn, 1938, 742).

He had no truck with the idea that land-use zoning should be manipulated to balance flows along public transport corridors and considered that city growth of the type envisaged by Pick led to increased waste of money, time and human energy. He favoured decentralisation to self-contained satellite towns where, with a population of 50,000 at 25 persons per acre, the average distance between home and work or countryside would be half a mile.

The Barlow Report's watchwords were 'redevelopment, decentralisation and dispersal' (Barlow, 1940, 196). It was imbued with the view that 'Railway transport.....is one of the largest contracting industries' (1940, 41) and had much more to say about road traffic and its impact on urban form. It expressed concern at the increasing amount of travel and congestion in London which it saw as a product of railway-oriented suburbanisation. The final recommendations called for population dispersal to self-contained garden cities and satellite towns, where home and work would be in close proximity obviating the need for lengthy journeys. Such strategies were to be developed by a new 'Central Authority, national in scope and character' (1940, 201). Interestingly in an additional minority report by Abercrombie and two others, there was a recommendation that this new Ministry should also take over, 'Some part of the planning functions of the Ministry of Transport' (1940, 222).

Concerns over the threats to the countryside led, in 1941, to the Minister of Works and Planning, Lord Reith, appointing the Committee on Land Utilisation in Rural Areas, the Scott Committee. The Scott Report (Scott, 1943) showed a keen awareness of the effects of roads in facilitating development in the countryside which was seen as an undesirable aspect of 'suburban drift'. The report bemoaned this and noted that new trading estates were rail connected. But it did not draw the conclusion that, by restricting industry to rail accessible sites, the rail option could be kept alive and there would be a rationale for resisting rural road building.²²

The Honourable Mr Justice Uthwatt chaired the Expert Committee on Compensation and Betterment appointed, in 1941, to resolve the problems over development rights and land values. The Committee produced a fascinating report (Ministry of Works and Planning, 1942) which was crucial in developing the case for effective planning and the legal and financial means by which it could be achieved. It would be unreasonable to expect such a broad study to dwell at length on the particular matter of railways and land. But it is notable that, despite a complete historic review of the role of the State in constraining the rights of landowners, the

²² It is worth recording that in the index to the Scott Report there were four references to jam making, but only one to railways!

issues concerning surplus lands and access to social housing were not mentioned, and neither was Howard's model of local community ownership of betterment. It is notable that there were no planners on the Committee, only lawyers and valuers. In line with their terms of reference, the Committee's report was wholly focused on how to secure effective State control of the use of land and had nothing to say about what betterment might be used for, other than to compensate landowners for loss of development rights. This failure to directly link development value with investment in physical or social infrastructure can, with hindsight, be seen to be a fundamental flaw within the post-war planning system.

The wartime plans for London

The County of London Plan focused on five major defects in London: traffic congestion; poor housing; poor open space provision; unsatisfactory mixing of land-uses; and outward sprawl. It was produced by Forshaw and Abercrombie: Forshaw was the County Architect, reflecting the continuing dominance of architectural concerns within planning ideology. As a result the stance towards the railway system was familiar:

To the planner the most obvious defects are the overhead lines carried on viaducts which impede redevelopment; the out-of-date character of some of the terminal stations, especially their faulty connection with main road planning and the large area of central land locked up in sidings (Forshaw and Abercrombie, 1943, 6).

Although the Plan recognised the need for modernisation and rationalisation of the network, the dispersal of population presaged a reduced role: the main physical works envisaged were aimed at removing the bridges across the Thames and their associated viaducts. The Plan recognised the difficulty of this and suggested that a specialist body be set up to consider its proposals. Despite the expected reduction in demand for rail services, the Plan embraced road building ideology and contained proposals for two orbital and nine arterial roads with flyovers and pedestrian footbridges and subways. This vision was developed from the Bressey plan (Bressey and Lutyens, 1937), but tried to relate this to the perception of London as a network of villages. Building on the work of Alker Tripp on the creation of traffic-free 'precincts' (Tripp, 1942), the plan proposed construction of American-style parkways allowing through traffic to be diverted away from the village cores through green backwaters. None of this was perceived as unacceptably intrusive.

The LCC Plan raised strategic issues of central concern to the Greater London Plan, also produced by Abercrombie, (1944b) which covered an area up to 50

miles from central London²³. This also was critical of continued suburban growth and was ambivalent in its attitude towards the LPTB which:

...now pioneer, now camp follower, plays a vigorous, if sometimes uncertain, role. It creates new suburbs and then finds itself unable to cope with the traffic: extensions in other directions aim at further spread of the population. On routes overcrowded beyond cure, it asks the straphanger to exercise patience beyond limit (Abercrombie, 1944b, 3).

The planned dispersal of over 1,000,000 people and their jobs to self-contained new towns was at the heart of the Plan, with a green belt to prevent further sprawl. This meant that:

Extensions of suburban lines and tubes, which may have been begun or for which parliamentary powers have been obtained, may no longer be required, and congested lines, it is hoped may be relieved (Abercrombie, 1944b, 10).

There were more proposals for new roads but the Plan was not totally negative towards the railways and envisaged electrification of outer suburban lines as far as places like Aylesbury, as well as better orbital routes, particularly around the north eastern quadrant to the docks, and a rail link to the new airport at Heathrow. Abercrombie saw the need to reduce freight costs by mechanisation, larger wagons and containers; he was alert to the industry's problems. But, again, he called for the creation of a special railway industry body to consider the ideas. The fact that, despite all his extensive research and consultations, Abercrombie fell back on referral to a specialist body, is symptomatic of the failure to integrate the private railway industry into the planning process. Bonavia recalled that:

Progress from the cloud-cuckoo land of planners trained as architects, lacking any transport experience, towards more realistic forms of planning, came in stages (1981, 188).

The Railway (London Plan) Committee was set up in 1944 and responded vigorously to the planners' downbeat view of the prospects for the railways. They objected to the basic tenet that dispersal would lead to a reduction in demand for travel into central London:

...we do not believe that the expectation of a reduction from this cause is likely to be realised,.....we feel confident that a greater dispersion of population will mean a greater volume of traffic (Ministry of War Transport, 1946, 10).

Their investment proposals reflected operational requirements rather than the planners' priorities of removing elevated railways on aesthetic grounds.

Wartime plans in provincial cities.

There were planning concerns similar to those in London in all the conurbations and the solutions of green belts and planned decentralisation were

²³ The two plans comprised '.. two sides of a seamless web of cloth' (Hall, 1995, 230).

common currency. As has been shown, in provincial cities trams and motor buses were the dominant influence on urban form: this and concerns over growing traffic congestion meant that road building was the dominant transport theme. Given the ideological gap between town planning and the railways which has been shown to exist in London, it would be reasonable to expect that few of the plans for the provincial cities would have much to say about integrating land-use with railways.

The general case, which will be illustrated later in the thesis in the Manchester case study, is that railway content was based on minimal expectations about development of the local network, but did embrace consideration of the location and character of main line stations and, in some cases, their rationalisation. The Abercrombie Plan for central Plymouth (Watson and Abercrombie, 1943) was unusual because the extent of bomb damage demanded almost complete rebuilding and had particular implications for the station. The central axis of the classically inspired plan linked the Hoe in the south with the main station on the city centre's northern periphery, thereby tying it into the grand scheme of things in a way that would have pleased Unwin.

A major exception to the generally minimal attention given to railways was Glasgow: the City Engineer's First Planning Report (Bruce, 1945) did contain extensive road building plans but, inspired by American practice, also envisaged construction of electric commuter railways along the central reservations of six radials, with two other roads already having parallel railways which would be electrified. Peripheral housing developments at locations such as Pollok, Castlemilk and Drumchapel were to be rail linked with the city centre too. In an echo of London, the plan also proposed the cutting back of the railways approaching the city from the south, to a new 'South Station' on the south side of the Clyde,.

The Bruce plan was only concerned with Glasgow and was based on decentralisation within the city boundaries. Abercrombie, in his Clyde Valley Regional Plan (Abercrombie and Mathew, 1946), took a much more strategic approach and proposed decentralisation to new towns which would be self-contained growth centres. The plan envisaged a new strategic road system but also electrification of the local railway network which included Glasgow suburban lines, lines from Glasgow to towns such as Paisley, Motherwell and Hamilton, and lines out to proposed new towns at East Kilbride and Cumbernauld. Abercrombie also identified certain lines as being redundant, including the Subway. As in London, he called for the setting up of a special commission to consider his proposals. Although there was a conflict between the Bruce and Abercrombie decentralisation strategies, the fact

that they both saw a significant role for the railways had a special influence on subsequent railway policy for the region.

Conclusions

Figure 8 summarises the findings of the chapter with regard to the thematic analysis of the railway-town planning interface. It has been demonstrated that, although *laissez-faire* was the dominant ideology there was, from the 1840s, an awareness that such an approach may well not produce a network best suited to the public interest. However, such doubts were initially held only by a minority and, as a result, State influence on development of the network was limited. The outcome was that its broad geography came to exhibit certain features which, eventually, were to handicap the railway system in its ability to compete with other modes.

These features were:

- duplication of routes at local and strategic levels;
- duplication of facilities, particularly stations and goods depots;
- poor location of stations with regard to town and city centres;
- failure to maximise network benefits, such as leaving strategic gaps and the poor development of cross-country routes;
- restricted vertical loading gauge.

This chapter has shown that there was an inexorable increase in State intervention, largely as a result of factors internal to the industry, and this was a part of a broader swing in political ideology towards intervention and collectivism which began in the late nineteenth century, and received two subsequent fillips as a result of the socio-political impacts of the First and Second World Wars. It is also important to note that, with the exception of the London Underground, intervention in the railway industry was through organs of the central State; the Board of Trade and the Ministry of Transport.

In parallel to the discourse around railways, there was a discourse around State influence over urban development. By 1900 the two were linked with regard to the working class housing question, as manifested by cheap trains, the debate around betterment and surplus lands, and the location and design of new suburbs, with the model settlements as a special case. The railways came to be seen as not only requiring control in the public interest in light of their role as the dominant transport mode, but that special control was required with regard to the housing question and other matters of interest to the town planning movement. It is significant, though, that town planning arose out of the public health and housing

Figure 8: summary of thematic analysis of 1830-1947 period

	Institutional structures	Policy	Outcomes
Political ideology: railway sector	Market based development of oligopoly, accelerated by the State in 1921, followed by creation of nationalised industry. LPTB the exception with regard to urban rail systems.	No overall network plan: recognition of the need for planning came too late for most of it. Even post-1945 the vision of integration restricted to transport sector.	Market forces led to railway being well integrated with C-19 urban form, but increasing dislocation post-1919: by 1948 network characterised by strategic weaknesses
Political ideology: land-use planning sector	Association with public health and housing led to planning becoming a function of the municipal domain under central government direction.	Planning seen as largely concerned with housing and countryside protection. Effective legislation only came about as a result of bombing and the drive for the Welfare State.	Despite a growing body of statutes, no commitment to effective planning control. No possibility therefore for use of planning powers to reduce the dislocation of the railway post-1919.
Professional ideology: railway sector	Emphasis on infrastructure reflecting the dominant civil and mechanical engineers, and general business matters internal to the industry	Main concerns with matters internal to the industry: locomotives, signalling, mergers. Few personalities with the vision of Pick.	Little re-adjustment of the network post the Grouping, with notable exceptions in London. Railways perceived by other professionals as old fashioned and not essential to the 'brave new world' of post-war planning.
Professional ideology: land-use planning sector	Focus on public health, housing and land development led to focus on municipal sector. Strong association with architects and highway engineers.	Initial convergence of interest with railway network, but development of garden city ideology led to hostility towards /ignorance of railways, whilst embracing road ideology.	Initially garden suburbs/cities integrated with network, but post-1919 progressive disengagement of planned developments from the rail network.
Governance and management : railway sector	Emphasis on business efficiency in structures led to mergers between rail companies and diversification into other transport sectors. Lack of linkages between railway industry and local government - LPTB the exception.	Companies focused on internal matters and resistance to State intervention. Public interest focused on a balance between efficient units whilst restraining their power. Integration between modes came to be seen as demanding nationalisation.	Post-1923 emphasis on internal managerial problems and little rationalisation or improvement of the network. Activities of MRCE and LPTB unique, more limited association with land development by SR
Governance and management : land-use planning sector	Planning initially in voluntary sector, then became a function of local government, set within broad national guidelines	Planning in a policy locus associated with public health and housing, roads, buses and trams, not railways.	Local government agencies for planning, even at the strategic level, and even in London, excluded railway companies. Ideas referred to specialist rail industry bodies.

movements which were essentially a function of local government, and that legislation placed town planning within the municipal domain. Intervention in the railways and land development were a function of quite different realms within the State.

Despite the development of a number of ideas and techniques to secure closer relationships between railways and the areas they served, they were not an essential component of British town planning ideology which crystallised around the notion of the garden city²⁴. This was essentially an anti-urban or, at best, small town, vision which sought to disperse the city and thereby undermine the railways which had been central to its development. This divergence of interest increased during the inter-war period when the primacy of the railways came to be challenged by road transport and the demands of the road network began to exert a powerful influence on planning ideology. This was also a time when the calls for countryside protection and planned decentralisation became more influential in Government circles. Although planners did have views about the relationship between railways and cities, they were pre-occupied with their visual intrusiveness. They were, however, excited about how to create new urban environments to accommodate growing road traffic and the ideology of the small planning profession meshed with that of the much bigger architecture and civil engineering professions who were similarly pre-occupied. Their shared vision was inspired by the Modernists, particularly Le Corbusier, who considered that cities would have to be completely rebuilt (Le Corbusier, 1929). He envisaged high rise blocks separated by a grid-iron network of local roads linked to American-style high capacity roads. But railways were a part of his vision too, with a complex, three tier underground network with all routes converging at a multi-level city centre station:

The only place for the station is in the centre of the city. It is the natural place for it, and there is no reason for putting it anywhere else. The railway station is the hub of the wheel (Le Corbusier, 1929, 166).

However, the British professionals overlooked these aspects of the Corbusian vision²⁵ and generally, with profitable private railways which were seemingly central to the country's survival, there was no awareness that road oriented planning contained the seeds of the geographical marginalisation of the railway network.

²⁴ In the international arena there was a radical alternative model of the transport oriented linear city developed by Soria in Spain (Velez, 1982).

²⁵ The exception was an unofficial plan produced by the Modern Architectural Research Group (Korn and Samuely, 1942: Gold, 1995)

In 1945 deeper State involvement with the railways and land development was facilitated by a broader interventionist thrust by the new Labour Government. Nationalisation of the railways was a part of the socialist agenda of bringing the 'commanding heights' of the economy under public control. The locus of professional and political debate about the railways was largely restricted to matters internal to the transport sector, ie. what form nationalisation should take and how to best manage the various transport modes in the public interest.

The reason why Pick's ideas were so notable is that there were few other figures in the industry who shared them. Herbert Walker of the Southern was one who did, and another was Barman²⁶ of the GWR (1947): he drew up a set of standards for new stations as shown in appendix seven, and was well aware of the importance of relating stations to the development around them. Somewhat over optimistically however he considered that:

To the town-planner, few buildings in a modern city are more important than the railway station. Its physical extent bulks large in the city plan (Barman, 1947, 69)²⁷.

Perhaps a more accurate reflection of the state of planning ideology came from another contemporary railwayman who, many years later, reflected that even with regard to the Southern Railway:

Overall, however, the close social inter-relation between transport and land use had scarcely been appreciated (Bonavia, 1987, 84)²⁸.

However, this chapter has shown that by 1947, such was the state of knowledge and understanding of the strengths and weaknesses of the national railway network, and its relationships with patterns of urban form²⁹, that it would have been perfectly possible to draw up a policy agenda for development of the network and the reinforcement of its relationship with planned patterns of urban redevelopment and growth. Such an agenda is set out below and will form a template against which to evaluate policy and practice in the 1948-94 period.

²⁶ Barman had rare qualities with regard to knowledge of the interface between planning, design and the railway network and awareness of the need for communication across the disciplines: he was an architect, who later worked as publicity officer at the LPTB under Pick (who died prematurely in 1941), and then moved to the GWR. Payne (1947) is further demonstration of the unique role of the LPTB in producing such cross-cutting professionals.

²⁷ This was a book about and sponsored by the GWR, presumably as part of Chairman Sir James Milne's rear-guard campaign against nationalisation: it seems that Barman's optimism about planners stemmed from Abercrombie's plan for Plymouth and its rather unique focus on the company's station there.

²⁸ Bonavia began working for the LNER in 1945 and became a senior officer in the BTC and BR: he was one of the few employees to write extensively about the railways with official blessing.

²⁹ These were nicely summarised by Beaver (1937).

A pre-condition was the creation of institutional arrangements which would have facilitated collaborative working between the land-use planning and railway sectors at national, regional and local levels. With regard to the railway network, the policy agenda would have included the following:

1. rationalisation of the network in order to remove duplicate routes and facilities, but with an eye on both contemporary diseconomies and the potential for future utility;
2. development of railway services to ensure that their pattern and quality would be competitive with that offered by road networks and road vehicles;
3. closing strategic gaps in the network, particularly with regard to CBD penetration and access across cities;
4. development of a programme of station enhancement to maximise their convenience and attractiveness to travellers, and station building so as to ensure that new urban areas would be located close to points of access to the network.

The town planning policy agenda would have included:

5. the general articulation of expectations about changing patterns of urban form in ways which would identify the implications for the potential utility of existing main line, suburban, cross country and rural railway routes, and the utility of new routes;
6. management of the redevelopment process in existing urban areas to maximise access to railway stations and rail freight facilities, with appropriate guidance for the location, layout, and density of development;
7. management of the location and character of greenfield site development so as to ensure accessibility to the railway network, with appropriate guidance for the location, layout, and density of development.

PART ONE

Conclusions

Chapter one has explained the derivation of the three research questions underpinning this thesis and carefully identified and explained the 13 steps in the development of the methodology. The crucial elements of the methodology are: the three dimensions to the interface between the railway and planning sectors – institutional structures, policy, and outcomes; the development of three explanatory themes – politics and political ideology, professions and professional ideology, and governance and management; the breaking up of the chronological analysis of the core of the thesis into two blocks: 1948-68 and 1969-94; and the utilisation of the product of this analysis to develop three hypotheses to be tested in the Manchester case study.

Chapter two identified certain key characteristics of the national network, such as the emphasis on radial routes to London, and those aspects which would need attention post 1947 in order to reinforce rail's attractiveness and efficiency as a transport mode in an increasingly competitive transport sector. In particular these included the duplication of routes and facilities, and the general failure of railways to penetrate into the heart of city centres. It has been shown that, by 1914, as the dominant transport mode the railway network was well integrated with patterns of urban development, but that the relationship was stronger in London than in the major provincial cities. Between 1919-39 this began to be undermined by the rising impact of road transport although, again in London, there were strong counter trends. There were important lessons to be learned from the Metroland, Southern Electric and New Works Programme experiences about the need for a very prescriptive stance to be taken towards railway investment and its relationship with developing patterns of urban form if these were to operate in ways which were advantageous for rail transport. As the market swung in favour of road transport the question, increasingly, was whether the State would intervene in this way.

To a certain extent such action by the State, which means action by politicians, would be influenced by the ideology of the professions and whether or not there was a consensus about the need for such intervention. Chapter two has shown that management culture within the railway sector was, with some notable exceptions, insular and focused on internal priorities centred around technological change and operating discipline. British planning ideology, although initially sympathetic to railways as a means to help solve the housing question, swung against railway interests once it crystallised around the notions of planned

decentralisation, self-containment and small town urban design. Even where Modernist concepts were developed for city redevelopment, the transport focus was around road systems not rail.

To the degree that the State became involved in each sector during the pre-1947 period, it was clear that each was tied to quite different loci within the State. Railways had always been a matter for central government – the Board of Trade and then the Ministry of Transport. The work of the 1905 Royal Commission on London Traffic showed the need for a metropolitan level of planning to secure better integration between railways and land development and the LCC and, particularly, the LPTB, showed what could be achieved. At the time, though, there were no proposals for similar structures in provincial cities. Town planning became associated with local government and those departments associated with public health and housing. With regard to transport this reinforced the tendency for planning to be associated with road planning because of the links with municipal highway engineers. The calls for special bodies to be set up to consider the railway implications of the plans for London shows the difficulties in linking the two sectors at the strategic level, and that the positive experiences in London had done little to narrow the gap between railways and planning.

The foregoing suggests that it is helpful to the analysis to consider the relationship between the railway and planning sectors at three spatial levels: national, regional and local. This is because there are different, but interrelated, sets of railway network features which interact with different land development issues at each level. In addition, as the State begins to engage with these, there are different institutional arrangements at each level too. This theme will be further developed in subsequent parts of the thesis.

The shortcomings in the relationship between the railway and planning sectors meant that, despite railway nationalisation and the introduction of more effective land-use planning in 1947, these were not likely to produce favourable results for the interface between the sectors without more deep seated ideological changes. Chapter two concluded with the development of the seven criteria to be used in the subsequent analysis to measure the degree to which this took place.

This concludes part one of the thesis.

PART TWO

Introduction.

Part two of this thesis is concerned with the review and analysis of the relationship between the railway and planning sectors in the 1948-68 period and comprises chapters three, four and five. These deal with, in turn: institutional arrangements, sector policy, and the outcomes of these interrelationships in terms of the geographical and operational characteristics of the railway network and their relationship with patterns of urban form.

Conclusions are drawn at the end of chapter three about the degree to which the institutional relationships facilitated the development of positive relationships between the sectors. The seven analytical criteria are used to analyse material in chapters four and five, and conclusions are drawn around them at the end of each chapter. The three explanatory themes are used to account for actions and changes as they occur in the dialogue, and their impacts are summarised at the end of each chapter.

Further observations will be made at the end of part two about the relationships between the sectors at the three spatial levels, and the threads will be drawn together to form the bases of the hypotheses to be tested in the case study.

CHAPTER THREE

INSTITUTIONAL ARRANGEMENTS: 1948-68

Introduction.

The railway companies remained under the control of the Railway Executive Committee until nationalisation, which was announced as a policy goal by Herbert Morrison in 1945 and, despite opposition from the companies and the Conservative party, was enacted by the 1947 Transport Act. The railways passed into State hands and became British Railways (BR) on 1st January 1948.

During the War serious consideration was given to how the legal obstacles to effective State control over land development could be overcome and what the goals of an effective planning system should be. Town planning was seen by Attlee's administration as playing a central role in reconstruction, developing the Welfare State, and protecting the countryside. The new town, which embraced a vision of the good life previously unattainable to the working class, was particularly attractive in setting the tone of what the Brave New World might look like: the 1946 New Towns Act was Labour's first piece of planning legislation. The Town and Country Planning Act followed in 1947 and provided the State with effective teeth to control patterns of development. In future, if land owners wanted to 'develop' land or buildings, they would have to apply to the State for 'planning permission'. The State could refuse this, if to do so was in the public interest, and the land owner would have no grounds for compensation for loss of betterment.

The aim of this chapter is to analyse the institutional structures which were created between 1947-68 for the management of the railways and for the operation of the land-use planning system, and to evaluate and account for the degree to which they were co-ordinated to secure the maximum utility of the railway network.

The British Transport Commission.

The 1947 Transport Act nationalised the railways, the inland waterways, some of the larger private bus companies and the long distance (over 40 miles) road haulage industry (Quick Smith, 1949). Each mode was put under the management of an 'Executive' responsible to the British Transport Commission (BTC) which, in turn, was responsible to the Minister of Transport. The LPTB was wound up and placed under the control of the London Transport Executive. This creation of a separate body for London ensured the continued separation of management of the Underground and main line commuter railways. The BTC was charged with the duty to provide:

.....an efficient, adequate, economical and properly integrated system of public inland transport and port facilities within Great Britain for passengers and goods with due regard to safety of operation.

Sir Cyril Hurcomb, former Permanent-Secretary of the Ministry of Transport, was installed as Chairman of the BTC, and Sir Eustace Missenden, former General Manager of the Southern, became Chairman of the Railway Executive. In the provinces the municipal bus, trolleybus and tram fleets remained under local authority control outside the BTC empire. Although the Labour Party was thoroughly imbued with the notion of building an integrated transport system, there was a tendency to think that nationalisation would deliver this automatically. There was awareness amongst the professionals though, that it would take time to work out what integration would mean in practice: 'this is a period of transition towards "a properly integrated system of public inland transport"' (Lamb¹, 1948, 5).

The task of managing BR as a single organisation was daunting enough:

The Railway Executive alone had inherited between 632,000 and 649,000 staff (no-one seemed quite sure of the exact figure), together with 20,000 steam locomotives, 1,223,000 wagons (half of which had been inherited from private owners), 56,000 coaches, 19,414 miles of track and 7,000 horses (Henshaw, 1991, 41).

With each mode under the control of an Executive, it is difficult to see how Government expected the institutional structure to deliver integration. In addition, there was a clash of interest between the BTC and the Railway Executive over who should control strategy (Bonavia, 1971,1981; Gourvish, 1986)². In theory, with State control over all sectors, integration was a matter of deciding which mode could best be used to transport a particular traffic and setting the rates accordingly. But, in practice, rates were controlled by a Transport Tribunal, not the BTC. So the BTC could only use quality to influence the choice between modes, a tool which historically had served the railways poorly. Competition continued despite nationalisation.

As the railways were nationalised so that they might be operated in the public interest, a mechanism was created whereby the public could influence the managers. In what for its time was a surprisingly enlightened initiative, the Transport Act created regional Transport Users' Consultative Committees (TUCCs), the membership of which, though appointed by the Minister, was intended to be representative of users (Cameron, 1953). Although useful talking shops, the TUCCs

¹ This was David Lamb's Presidential address to the Chartered Institute of Transport.

² By contrast, despite their failings, the Big Four had become regionally based multi-modal transport enterprises, owning railways, docks, hotels, shipping fleets, lorry fleets and bus companies under a single, unified management (Bonavia, 1971).

had no powers and had to report through a Central Transport Consultative Committee (CTCC), partially staffed by the BTC. Access to the Railway Executive was therefore circuitous and open to BTC influence. The TUCCs and the CTCC became important bodies in the struggles against rail closures though, as they were one of the few avenues for lobbying in defence of rail transport, in an industry whose managers, as public servants, were gagged:

One of the difficulties that nationalisation has brought to the railways is the abolition of the directors who were also Members of Parliament and could speak in both Houses for the industry when required. Under nationalisation the railways have no one who can speak for them at all times (Pearson, 1953, 121).

Although their numbers were to dwindle over the years, at the time of nationalisation the railway trade unions had thirty MPs (Morris, 1948), all within the Labour Party of course. However, this influence on Labour Governments was not necessarily within the long term interests of the competitiveness of the railway industry against an aggressive road transport industry and, of course, identification with Labour could become an added incentive to a Conservative Government to intervene in railway management.

The land-use planning system.

Prior to the 1946 New Towns Act, three types of institutional mechanism had been employed in the creation of new settlements. The first was the actions of industrial philanthropists, as in Bournville and Port Sunlight. The second was voluntary organisations with members ideologically committed to the garden city movement, as in Hampstead, Letchworth and Welwyn. The third was action by local authorities, as in the garden city satellites of Wythenshawe and Speke. However, the mechanism created under the New Towns Act was the 'development corporation', based on the Reithian model of the BBC. Membership of development corporations was to be by ministerial appointment and they were vested with powers to compulsorily purchase land, and produce and implement master plans, largely outside the influence of local authorities.

Under the 1947 Town and Country Planning Act the process of 'development control', whereby prospective developers have to apply for planning permission from the relevant local planning authority, became the most familiar face of the planning system to the general public. To help them make decisions which would be technically sound and which would have public confidence, planning authorities also had duties laid upon them to carry out surveys and consultations and to present their proposals as statutory development plans. These public documents, which would comprise maps and written statements, were also to be used to co-ordinate

investment in publicly owned infrastructure with public and private development projects. Development plans, and other statutory instruments, circulars and policy documents from central government, were to be used as the basis upon which individual planning applications would be considered. These two arms of the planning system - forward planning and development control, were inextricably linked.

The important point for this thesis is that the Act gave local planning authorities powers to make decisions as to where land should be developed and what it should be developed for so that, if authorities so wished, a close spatial relationship could be achieved between land-use patterns and particular transport networks.

In light of what has been said in chapter two about the potential relationship between betterment and the development of infrastructure, it is worth saying more about these aspects of the Planning Act. The report of the Uthwatt Committee (Uthwatt, 1942) provided the intellectual point of departure: the argument was that just as the State should not be liable for a payment of compensation to a landowner refused planning permission, one who did receive permission should surrender the betterment through taxation. This became known as the 'development charge' and was levied in the Act at 100% of the betterment. But this money disappeared into the Treasury pot. As an application of the ideas mooted at the turn of the century by Perks, hypothecation could have included modernisation of rail services to serve new developments, but this was never proposed and the Treasury has always resisted hypothecation on principle³.

The planning system was to be overseen by the MTCP but detailed operation was to be in the hands of 'local planning authorities' which comprised the then existing upper tier of local government - the county councils in the shires and the county boroughs in the major urban areas. It is clear therefore that, from the outset, there would be difficulties in achieving co-operation between the bodies involved in railway management and land-use planning. They were the product of quite different models of public control. The railways were perceived as an industry, similar to the nationalised utilities, with a focus on production dominated by complex technologies and operational matters internal to the industry. On the other hand land-use planning, although steered by national government, was to be carried out by local councils and was seen as a service for local communities, closely related to other services.

³ Changing this principle has been a significant factor in the recent development of transport policy.

Also there were relatively few town planners in the early years as membership of the Town Planning Institute was reported as 2,500 in 1950, some 700 of whom were students. Many practitioners were in fact architects or surveyors, with little knowledge of transport and the focus on design still prevailed; 'Emphasis is placed on design, because that must be the focus of knowledge' (MTCP and Department of Health for Scotland, 1950, 34). Municipal engineers held a special place as 'the majority of chief officers to local authorities responsible for planning are engineers' (MTCP and Department of Health for Scotland, 1950, 25). Transport was therefore barely within the professional gaze and, where it was, the focus was on roads.

In addition statutory undertakers, such as BR, were given special status under the Planning Act whereby they could engage in 'development' associated with railway operation without the need to formally obtain planning permission. Where BR wished to engage in new railway building, or other major civil engineering works, then they continued to seek powers through the historic parliamentary bill process. These both reduced the need and opportunities for the growth of mutual understanding and co-operation between the two sectors.

The initial relationship.

Despite the barriers there was some evidence that the early post-war commitment to integration led to limited contact between the two sectors which was aimed at achieving co-ordination. For example, the annual reports of the BTC for 1948-52 contained sections reporting on the activities of the London Transport Executive (LTE) entitled 'Population, Planning and Future Developments': these reviewed activity with regard to new towns, reported on the London Plan Committee, and referred to contemporary population projections. In the 1950 annual report the LTE section stated:

The Executive regularly review progress in the development of local authority housing estates, so that transport facilities may be provided as new traffic needs arise (BTC, 1950, 164).

However there were very few references to such matters in the annual reports with regard to the main line network outside London, although the 1949 report refers to an approach by the City of Glasgow with regard to the electrification of local services. This liaison continued over the years and did eventually bear fruit. The most heartfelt references to the impact of planning legislation in the annual reports were over the workload created for the estates section in submitting claims under the compensation provisions. Generally, despite the recommendations of Abercrombie within the Barlow Report, transport planning and land-use planning were in separate government departments and, specifically, no integrative

mechanism was set up at national, regional or local levels with the explicit role of securing integration between urban development and the railway network.

Conservative reaction to Labour's initiatives.

The long, grey years of austerity made it very difficult for Attlee's Government to deliver on its bold promises and, by 1950, the socialist dream was wearing thin.

With regard to transport:

After six years of Labour Government, the Holy Grail of road/rail integration remained as elusive as ever. The high hopes of the 1947 Act were never realised..... (Henshaw, 1991, 56).

In 1951 the Conservatives were returned to power and the post-war consensus (Smith, 1990) was tested: it did not extend to transport and the road haulage industry was promptly denationalised by the 1953 Transport Act. The railways remained in public ownership as there was no practical alternative and became the dominant concern of the BTC. Although road haulage was freed to pursue the most profitable traffic, the railways retained the common carrier burden, with some relaxation, and were prevented from operating road haulage services to railway depots. There had been widespread criticism of the two tier structure of Executives and the BTC (Pearson, 1953), so the former were abandoned and the railways came under the sole management of the BTC. Management of London Transport remained as a separate body under the BTC umbrella. With the retirement of Hurcomb, General Sir Brian Robertson was appointed as Chairman of the BTC, continuing the long association of the military with railway management.

As well as being supporters of a free enterprise road haulage industry which would expose the railways to competition, the Conservatives:

returned to power obsessed with euphoric recollections of life in the late 1930s. They sighed for the LMS, LNER, GWR and SR, and the supposed stimuli of old identities, liveries and rivalries (Allen, 1966, 15).

Under the 1953 Act the BTC was therefore required to develop a devolved, regional structure for the railways. This was introduced in 1954 (Ministry of Transport, 1954) and bore some striking similarities to the geography of the Big Four and facilitated the continuation of pre-nationalisation cultures. The regions were the Southern, Western, London Midland, Eastern, North Eastern and Scottish. These had been in existence for operating purposes since nationalisation, but now the six Area Boards became statutory bodies with full powers to manage the railway, with day-by-day operation through a General Manager. Although local authority associations were consulted as part of the preparation of the relevant White Paper, its content was wholly focused on railway matters and did not refer to any need for liaison between the Area Boards and local planning authorities. Robertson was

concerned about the lack of control over the boards at the centre and created a 'General Staff' and, below it, a 'Central Staff' at the BTC to counteract the power of the regional managers and co-ordinate their actions, producing a labyrinthine decision making structure (Bonavia, 1971, 1981) Other former army officers were drafted in reinforcing the militaristic and introverted culture of the organisation and its focus on production and 'man management'⁴.

Operation of main line commuter services into London remained under the control of BR and were in fact in the hands of four regions: the Southern, Western, London Midland and Eastern. Despite increasing patronage on the commuter routes, some years later Hall highlighted the failure to bring about improvements and bemoaned the lack of integration between London Transport and British Rail services:

In 1955, after seven years of nationalisation during which integration should have taken place, the Committee of Inquiry into London Transport recommended strongly that facilities for interchange should be improved. Yet still nothing is done (1971, 141).

The totality of the 1947 Planning Act was also beyond the Conservative's interpretation of consensus, particularly that element of it concerning taxation of betterment which was dismantled by Planning Acts in 1953, 1954 and 1959 (Parker, 1985). However, other actions by the Conservatives broadened the scope of planning, particularly the 1952 Town Development Act. Pressure for this came from local councils, especially in the South East, who looked jealously at the benefits enjoyed by localities arising from new town designation: the act empowered local councils to enter into agreements to accept large overspill populations from exporting authorities such as the LCC. As a result the Conservatives only designated one further new town during the 1950s. As further evidence of their desire to distance themselves from the Socialist connotations of planning, the Conservatives also wound up the MTCP and its functions were absorbed into the Ministry of Housing and Local Government (MHLG), which would inevitably lead to some dilution of purpose.

In the previous chapter there was discussion of the emergence of the regional focus for town planning activity in the inter-war years. The deliberations of the Barlow Commission had reinforced this and, in the late 1940s, such was the scale of activity by local councils with regard to both housing and town planning activity, that the MTCP created a network of regional offices. However, there was no

⁴ The BTC headquarters were located in the former Great Central Hotel adjoining Marylebone Station and became known in the industry as 'the Kremlin': dining facilities were known as 'messes' and salaried staff continued to be known as 'railway officers', a situation which continued to the end of BR.

creation of a more formal tier of elective government at this level and, in fact, very early in their term of office the Conservatives closed these regional offices. So, despite the development of a regional structure for BR, the institutional arrangements for regional co-ordination between the planning and railway sectors worsened.

Growth of the road lobby.

As the new structure for the railways bedded down, major changes developed in the balance of competition between transport modes. Mass car ownership sat comfortably with Conservative ideology and characterised 'Super-Mac' and the 'you've never had it so good' years, in contrast to the austerity under Labour (Sked and Cook, 1993). Road transport interest groups had existed since the turn of the century, typified by the Society of Motor Manufacturers and Traders (SMMT) and the Royal Automobile Club (RAC). Many became members of the overtly lobbyist British Road Federation (BRF), founded in 1932, whose influence was reaching new heights in the 1950s (Council for the Protection of Rural England (CPRE), 1992; Hamer, 1987).

There was a direct link between local government and the road lobby as the County Surveyors' Society had been developing plans for a national motorway network for years, and local authorities worked closely with the BRF. Sir James Drake, the County Surveyor of Lancashire, had been instrumental in securing passage of the Special Roads Act in 1949: it was no coincidence that Britain's first stretch of motorway was the Preston by-pass, opened in 1958. The 1950s also marked a shift in power within the trade union movement as heavy industries declined and manufacturing expanded. The balance of power between the transport unions shifted away from those of railway workers, typified by ALSEF and the NUR (McKenna, 1980), towards the Transport and General Workers Union (T & GWU), to which lorry drivers and car workers belonged. This growing political influence of the road lobby was a significant factor which, along with problems within the railway industry itself, led the Government to pursue further major changes in the institutional arrangements for management of the railways.

In 1959 Ernest Marples, owner of Marples Ridgeway a road building company, became Minister of Transport. Government concern over British Railway's finances was increasing at this time and, despite the fact that a Parliamentary Select Committee was investigating its activities, Marples set up his own committee of inquiry headed by Sir Ivan Stedeford, Managing Director of Tube Investments. The committee comprised private businessmen and two civil servants:

its deliberations were shrouded in secrecy lending credence to the conspiracy theory of history (Henshaw, 1991, 122-129). But it significantly influenced the direction of subsequent events, such as the appointment of Dr Richard Beeching, a Committee member and former Technical Director of ICI, to the chairmanship of the BTC. The importation of personalities from private industry was a feature of the Marples-Beeching era. Beeching's appointment caused a furore as his salary, at £24,000 twice that of Robertson, was seen as a portent of difficult times ahead.

One significant innovation introduced by Beeching, though previously suggested by the BTC, was the creation of a subsidiary to develop railway property interests. Interestingly the name chosen was 'Railway Sites Ltd.', taken from a company created by the LNER in 1937 (Biddle, 1990). Though chaired by railwaymen, this company did include personalities from the world of property on its board, notably Harold Samuel of Land Securities Investment Trust,. There were no planners, but at least it symbolised a more pro-active stance towards the extensive land holdings.

In the early 1960s, when transport policy became dominated by road building, the MoT began to broach the idea of joint working on transportation studies to major local authorities in the conurbations. In the West Midlands for example, a 'West Midlands Conurbation Highways Committee' already existed and, in 1963, the Ministry wrote to Birmingham City Council suggesting working together in 'formulating a programme of road improvements for the next 15-20 years' (Birmingham City Council, 1963): this sort of initiative was in stark contrast to the institutional relationships which existed between the Ministry, BR and local government.

Creation of the British Railways Board.

The 1962 Transport Act disbanded the BTC and separated control of the nationalised elements of road and rail transport. Control of the railways was recentralised and given to the British Railways Board (BRB) with the following remit:

It shall be the duty of the Railways Boardto provide railway services in Great Britain...and to provide such other services and facilities as appear to the Board to be expedient, and to have due regard....to efficiency, economy and safety of operation.

The overall aim was to create a simpler and more accountable organisation, charged with the task of having all the businesses at the 'break even' point within five years. Theoretically the industry was finally freed from statutory restrictions on its ability to fix rates and fares although, in practice, political control increased. Although the other nationalised transport operations remained in public ownership, and a National Transport Advisory Council was set up whereby the successor

Boards could meet and develop policy, the 1962 Act was widely seen as destroying any potential co-ordination between the nationalised undertakings (Bonavia, 1971,100). The Act gave the Minister many powers to intervene in the work of the BRB and, no doubt with a view to coming battles over closures, severely curtailed the powers of the TUCCs. In the future, where closures were mooted, they would only be able to oppose them on the specific grounds of 'hardship' to individuals affected by the closure proposal. Section 87 of the Act required the BRB to submit development proposals on surplus land to the MHLG and Railway Sites provided a convenient vehicle for this. To create an even more development oriented stance towards the estate, the offices of the Chief Estates Surveyor and Railway Sites Ltd were merged in 1965.

A renaissance for integrated land-use and transport planning.

The 1960s were years of major upheaval for the railway network. Public transport in general was in relative decline as a result of rising car ownership, and the whole notion of operating railways and bus services as commercially profitable enterprises was undermined: publicly owned transport as a whole needed to be thrown a lifeline. This came in the late 1960s as the product of a wider debate about urban problems and the need for new institutional structures. Like its 1945 predecessor, the Labour Government elected in 1964 under the leadership of Harold Wilson, was much more interventionist than its Conservative predecessor: they were committed to accelerated slum clearance, rejuvenation of the new towns programme, and economic planning at the regional and national levels. However, with regard to transport, the new Government was still subject to the intense pressure of the road lobby, the general popular aspiration towards car ownership and, within the party, the growing influence of the Transport and General Workers Union, ably led by Jack Jones. There could be no turning around of the underlying growth of private road transport therefore but there was an attempt to look at the railway problem more strategically. The commitment to regional policy led to the creation of Regional Economic Planning Councils and, after April 1965, railway closure proposals were submitted to them for consideration: 'The climate was clearly more restrictive' (Gourvish, 1986, 441).

With the commitment to planning which so typified this Government, and Labour's long-standing commitment to social justice, perhaps a skilful politician could put publicly owned transport on to a firmer foundation. This turned out to be the first

woman to play a significant governmental role in transport⁵, Barbara Castle, who 'was part of the intellectual left-wing of the Labour party, eager to fuse the reforming zeal of the 1940s with the central planning obsession of the 1960s' (Gourvish, 1986, 351). Castle produced a series of White Papers (MoT, 1966, 1967a, 1967b, 1967c) which drew some fundamental lessons from the experiences of the previous twenty years and introduced significant innovations in institutional arrangements. The learning went deep: it was understood that; 'The nature of urban transport systems must be based on our ideas of the kind of cities we want' (MoT, 1967b, 1), and crucially; 'We have neither the physical space nor the economic resources to rebuild our cities in such a form that all journeys can be made by private car...' (MoT, 1967b, 2). The conclusion was that land-use and transport planning needed to be much more closely integrated, with the aim of reinforcing the potential to use public transport in cities, and that new interventionist bodies were required in the major conurbations to plan, co-ordinate and operate public transport. These were to be called 'passenger transport authorities' (PTAs) which would make policy, to be implemented by 'passenger transport executives' (PTEs). New legislation was proposed which would address this wide range of matters and this became the 1968 Transport Act: in particular this revised the remit given to the BRB, and took the hard edge off the 1962 version, as it became:

...to secure that the combined revenues of the authority and of its subsidiaries taken together are not less than sufficient to meet their combined charges properly chargeable to revenue account, taking one year with another.

In response to the general thrust towards more sophisticated planning the BRB created a 'Central Planning Department' with the object of working on the internal corporate plan and co-ordinating other work such as the 'conurbation studies' and 'planning such as that for the Channel Tunnel' (BRB, 1967, 2).

At this time there was increasing concern too about the effectiveness of the structure of local government inherited from the nineteenth century. Regional geographers had a clear understanding of the implications for city governance of the decentralising trends which were so apparent in the city regions (Dickinson, 1972). The fit of the territories of existing institutional structures with the changing geography of the conurbations was increasingly unsatisfactory. In addition, a managerial revolution was taking place throughout the West in pursuit of the economies of scale achieved by large organisations, lubricated by application of

⁵ Although women had been employed by railway companies from the 1830s, their history has been disregarded by most historians and 'is a history of exploitation as cheap labour, and of segregation in "women's work"' (Simmons and Biddle, 1997, 564-566)

new computer technology, typified by such giant agencies as NASA and the American multi-nationals. Harold Wilson enthused over the 'white heat of the technological revolution', and there was a desire to bring these benefits into local government. Change had already taken place in London as, in 1963, the LCC had been replaced by a new strategic authority, the Greater London Council (GLC), with local services delivered by a lower tier of 32 boroughs and the City of London Corporation. So in 1966 the Government set up Royal Commissions on Local Government for England (under Sir John Redcliffe Maud) and Scotland (under Mr Justice Wheatley), and these reported in 1969. A common theme was recognition of the need for much bigger units of government, but there was debate over the advantages of a simple unitary structure, as opposed to the need for an upper tier of GLC type strategic bodies in the major conurbations. The majority of the English commissioners, seeing a need for simplicity, only accepted a need for an upper tier in the major conurbations, whereas the Scottish commissioners saw a need for one everywhere. These matters would not be finally resolved until the 1970s and will be reviewed in chapter six.

Castle was a pugnacious politician but, despite her commitment to the nationalised railway and her demonstration that she was the 'man' for the job (MoT, 1970), nevertheless she was also subject to the political pressure of the road lobby. In response, in order to accelerate construction of the motorway network, one of her final initiatives was the creation in 1968 of the Regional Road Construction Units, which combined staff from the Ministry of Transport with those seconded from local government. This was another fusion which, if applied to the railways, would arguably have enabled the BR regions to develop closer liaison with local land-use planning policy making.

Conclusions.

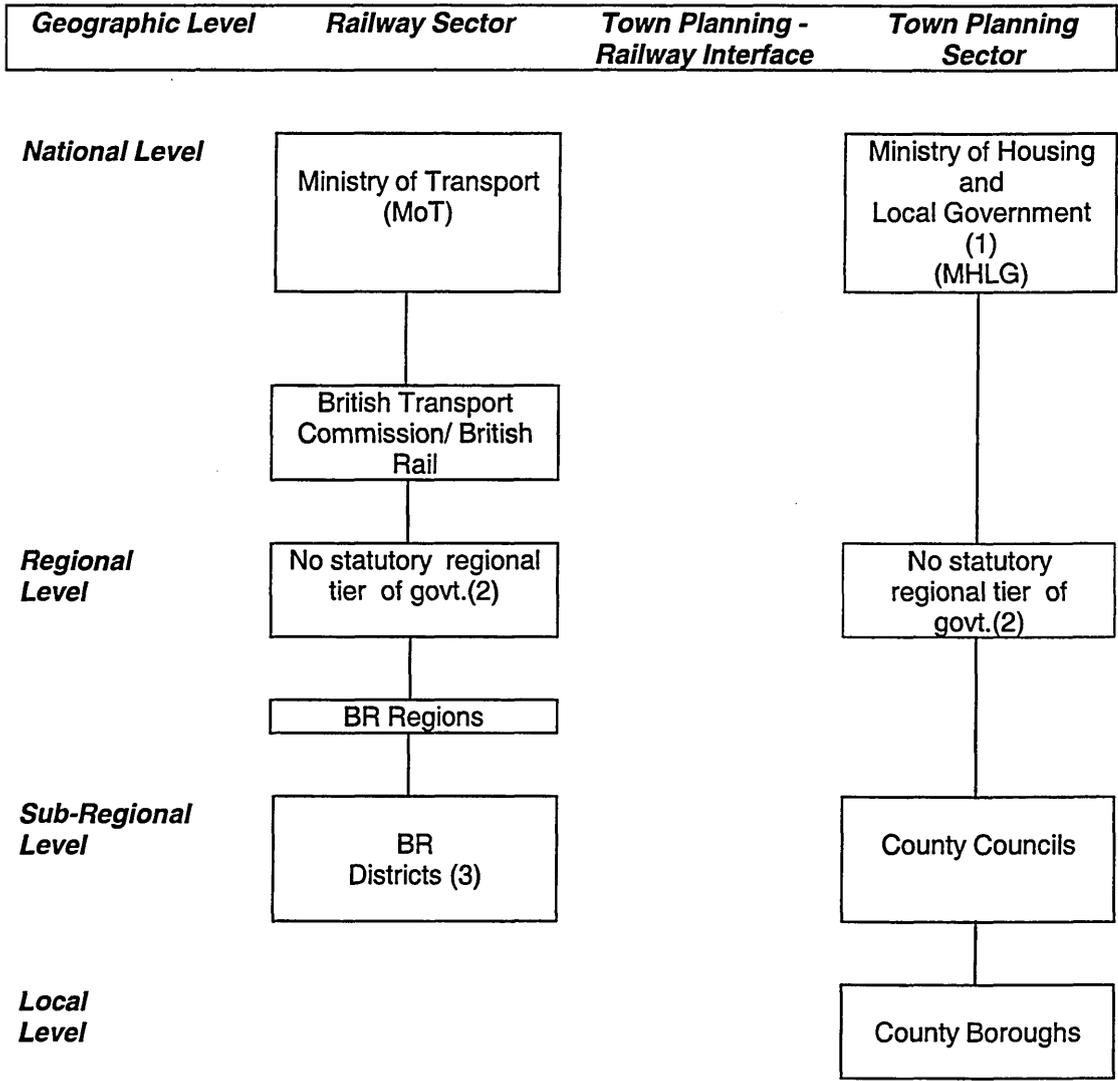
This chapter has shown that, between 1947-68, although management of the railway network and operation of the planning system were both State activities, their institutional structures were quite different. They were associated with quite different parts of the governmental regime and there were minimal points of contact between the two (figure 9). Figure 10 summarises the explanation for this utilising the three core themes. In the immediate post-war period transport integration was the priority for the Labour Government and this produced the complex structure of the BTC and the various Executives. On denationalisation of the road haulage industry, the Railway Executive was removed from the structure by the Conservatives but, a backward look towards the Big Four, produced a statutory regional structure.

Eventually the drive for a more commercially efficient organisation led to the abolition of the BTC and its replacement by the BRB, which was left intact by the subsequent Labour government. The professional cultures within the nationalised railway continued to be introverted, disciplined and hierarchical. Although, in the early 1960s, the Conservatives progressively sought to replace the public service ethos with a commercial one, this did not alter the view about the need for a centralised structure, rather it served to reinforce it.

Because of its involvement with reconstruction and the Welfare State, planning was seen as essentially a local service to be delivered through locally elected councils with a need to be sensitive to local demands. Although initially a flagship activity by the Attlee Government with its own Ministry to guide the local authorities, the Conservative's lesser enthusiasm saw the absorption of this by the MHLG. Towards the end of the period the renewed enthusiasm for planning and the intention to reform the structure of local government, held the promise of a more distinct place for planning within local government. Planning ideology was comfortable with the institutional structure and planning's links with local authority road builders and council house designers. In terms of the internal structure of local government, planning was usually subsumed within the local authority technical services sector, typically the engineer's department, and this reinforced the professional synergies.

These poor institutional relationships meant that, even if policy makers in each sector were looking to co-ordinate their activities, delivery of this would not be easy. It was only towards the end of the period, and only in the major conurbations, and only with regard to passenger traffic, that the combination of a political opportunity with changing political and professional ideologies produced a consensus around the creation of intermediary bodies, the PTAs/PTEs. The segregation throughout most of the period between land-use planning and the railways can be contrasted with the much more widespread and closer relationship that existed between local government, particularly the highway authorities, and the private sector road lobby.

Figure 9: Institutional relationships between the railway and planning sectors in England 1948-68.



1. The Ministry of Town and Country Planning was absorbed into the Ministry of Housing and Local Government in 1953.

2. The Conservative Government elected in 1951 closed the regional offices of the MTCP. Serplan (Serplan, 1992) was created in the South East region in 1962 and the advisory Regional Economic Planning Councils were created in the mid-1960s. Scotland had its own locus of government throughout the period, whilst the Welsh Office was created in 1965.

3. Used for operating purposes only. Generally managerial decisions were made at regional headquarters, which in most cases were in London, or by the BTC/BRB.

Figure 10: summary of thematic analysis of institutional structures 1948-68.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology	Initially seen as a public service: focus on integration with other transport modes. Separated out by Conservatives, eventually with a more commercially oriented business structure.	Generally weak and minimal, but realisation that a need for more integrative structure at the end of the period	A local service closely related to others, especially housing. Initially a flagship service, withdrawal from this by Conservatives. Search for more efficient structure by Labour by 1968.
Professions and professional ideology	Focus on internal functions, traditional introverted and hierarchical structures maintained. New influences were from private business, reinforced the isolated, national identity.	Few points of contact between professions in the two sectors which knew little of each other.	Planning was embedded in structures which were dominated by professionals concerned with road building, and planners looked towards these on transport.
Governance and management	Centralised, production oriented body under Labour. Rivalry between regional bodies created by Conservatives, followed by creation of BRB on private sector model	The two activities were seen as quite different; tied to different parts of the State structure with little need for contact; change of view with regard to passenger services in main conurbations by 1968	Initially a separate government department, then subsumed in a Ministry dealing with other centrally steered local services. But essentially a local service: awareness of need to update geography of local government by 1968

CHAPTER FOUR

SECTOR POLICY: 1948-68

Introduction.

Commentators have seen the railways as experiencing net disinvestment since the late 1930s (Gourvish, 1986, 68): during the War the network suffered extensive damage and received minimal maintenance. In 1947 the operating ratio (the ratio of costs to income) stood at 103 per cent, so there was no internal source of capital accumulation. Britain was experiencing severe austerity and the economy was weak leading to Stafford Cripps devaluing the pound in the crisis of 1949. Railway investment was on the basis of make-do and mend.

The major tasks for the planning system were¹: reconstruction of the war damaged cities; housing renewal; providing sites for development associated with the Welfare State; new towns; and protecting agricultural land from development. The overriding concerns of contemporary planning ideology with regard to transportation were remodelling cities to mitigate the effects of road traffic, and a reduction in daily commuting through dispersal of population to self-contained satellites. The prolonged period of austerity, including severe restrictions on the availability of building materials, meant that little progress was made with realising the ambitious agenda: the achievements were largely limited to designation of the first generation new towns with little actual development taking place and, in the cities, the erection of thousands of prefabricated houses to meet the immediate housing crisis.

When the economy improved in the 1950s the political context was such that transport and planning policy developed in ways which were markedly different: under the Conservatives, integrated transport and State directed decentralisation were abandoned. However, the re-election of a Labour Government in the mid-1960s led to a resurgence of commitment to both areas of policy and, significantly, the relationship between them. But this was in a context where the nature of transport infrastructure and society's transport behaviour were markedly different from those of 1948. The aim of this chapter is to review how policy for the railways took account of planned changes in urban form, and the degree to which planning policy was influenced by considerations about access to the railway network.

¹ These were extensively reviewed in the introduction to a White Paper in 1944: see appendix six.

The railways: a difficult start.

One of the most urgent tasks facing the Railway Executive was modernisation of the motive power fleet: although Continental and American railways had been replacing steam with electric and diesel locomotives since the 1930s, Robert Riddles, the Railway Executive's Chief Mechanical Engineer, ordered a new generation of steam locomotives and the last of them was not delivered until 1960. This decision was a source of tension between the BTC and the Railway Executive, illustrating the inability of the Commission to influence strategy (Bonavia, 1981, 45-55). It locked the railways into a form of traction which, although comparatively cheap to build, was labour intensive in operation, filthy, and thoroughly Victorian in image. The overall intention of the Railway Executive seemed to be to recreate the railway as it existed in 1939, and the average speeds of the express trains of that period were used as a benchmark against which to measure progress in reconstruction: the mind set was backward looking.

The Railway Executive was concerned about loss making rural branch lines, few having been closed since the Grouping (appendix nine): a Branchline Committee was set up in 1949 to expedite closure and the annual reports of the BTC contained a section on 'Closing Lines and Stations'. Securing closures was no easy matter, not at this time because of public opposition, but because of legal complexities over land ownership dating from the time of railway construction (Henshaw, 1991, 49): but the important point is that the emphasis was on closures, not openings².

Planned decentralisation and urban renewal.

The location of the new towns was fixed by central government and, in continuation of the locational characteristics of their antecedents, the sites designated around London were on the main line network. This was in fact a recommendation of the New Towns Committee:

It is better for a town to be on a through railway line than at the end of a branch; and in view of the importance of the rail traffic generated by a new town, or a group of such towns, the possibility of adding to and extending existing railways should not be ruled out (Ministry of Town and Country Planning, 1946, 12).

However, location on a railway was, typically, the limit of the consideration given to planning around rail. For example, in the master plan for Harlow (Gibberd, 1952), one of the most self-consciously design oriented plans, although the large area designated for the town centre abutted the station site the area closest to it

² A small number of new routes were planned, but these were freight links to new collieries, such as at Calverton in Nottinghamshire.

was zoned for a park and playing fields, with the commercial area being the most distant (figure 11 a and b³). This was not a plan based on maximising access to the station, despite Gibberd's awareness that the railway was a contender for electrification, and was contrary to the advice given by the New Towns Committee wherein it had seemed that the tradition of Unwin lived on:

It (the station) should be an outstanding feature of the townThe siting and approaches will be part of the general scheme for the town, but the passenger station should be located as near as possible to the main shopping centre, and the railway and main bus station should be designed for easy interchange of traffic (New Towns Committee, 1946).

In other conurbations location on a railway line was also seen as desirable, but commitment to rail was minimal as, for example, at East Kilbride. This was a village of 3,000 population at the time of designation for Glasgow overspill, but had an initial target of 45,000⁴, more than enough to sustain a train service, especially as the density was to be 40 persons per acre. There was an operational station adjoining the historic village core, but the area designated for the new town centre was about half a mile away: the master plan noted that, notwithstanding the huge amount of road building proposed:

The form of the ground does not lend itself, without major cutting, to a realignment of the track to bring the passenger station nearer the centre of the town (East Kilbride Development Corporation, 1950, 16).

Despite Labour's commitment to planning, it was not until after the election of the Conservatives in 1951 that, because of economic growth, the pace of reconstruction accelerated. In 1954 building licenses were abolished and money became available for major projects. Local authorities embarked on massive slum clearance and redevelopment programmes and employed batteries of young, Modernist architects to design their new housing. Building high allowed for uses other than housing, whilst keeping densities relatively high and minimising the loss of agricultural land. But when the inner cities were redeveloped, despite high density construction, it was rarely possible to get more than half the number of people back onto a given area of land, because of the need to provide land for other uses.

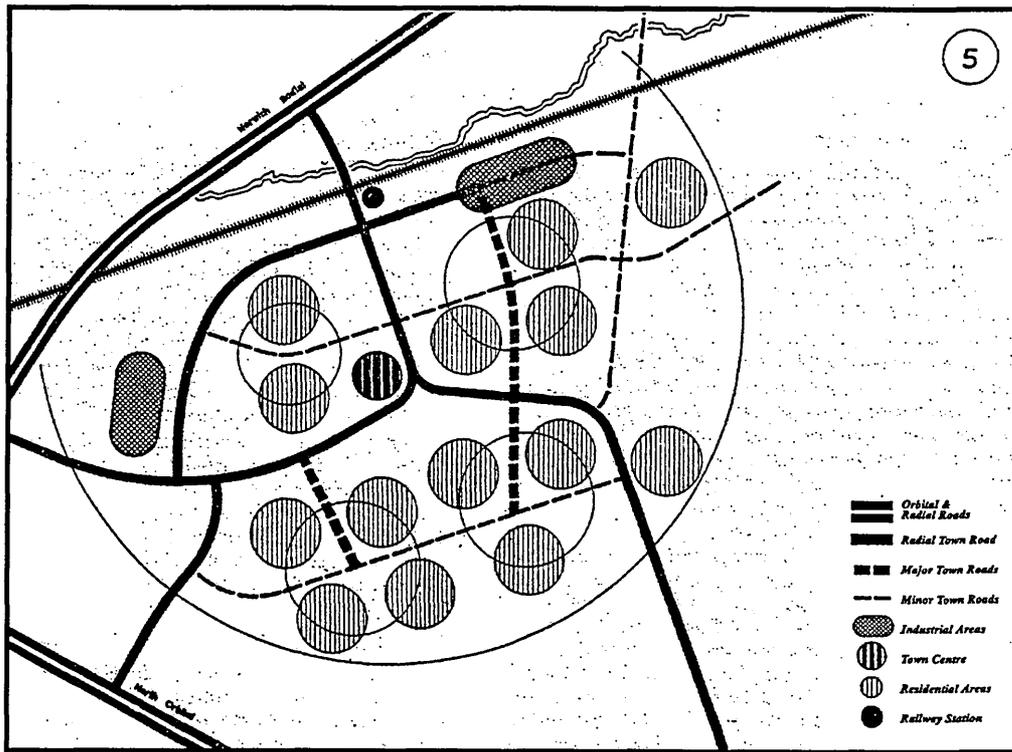
Dispersal to new towns was, increasingly, not possible as they were expensive because of the need for infrastructure, and generating the growth of jobs at the same pace as the public sector could build houses was difficult too. So,

³ Fig 11a shows the semi-circular town plan which failed to maximise accessibility to the station, and the failure to include access to the station as a key component of the internal road circulation systems. Fig 11b shows the poor access from the station to the commercial core of the town centre.

⁴ This was later raised to 70,000.

Figure 11a: Harlow new town plan and the railway.

Road Pattern



Methods of Circulation

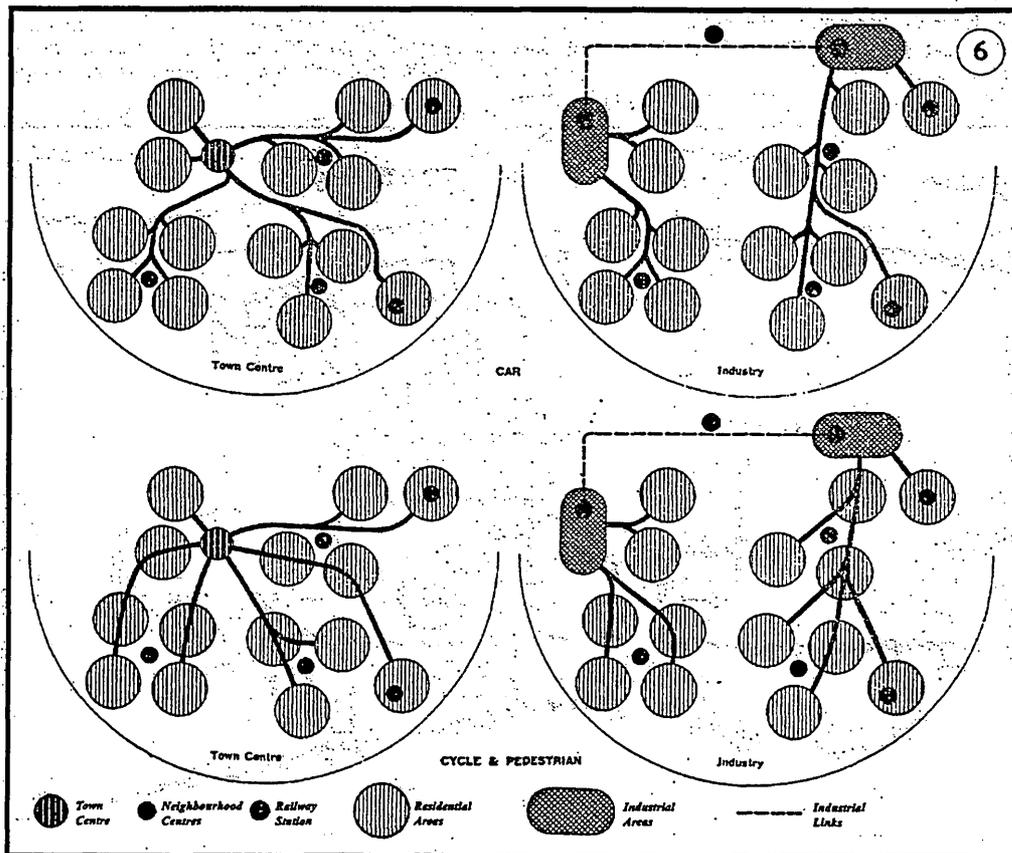
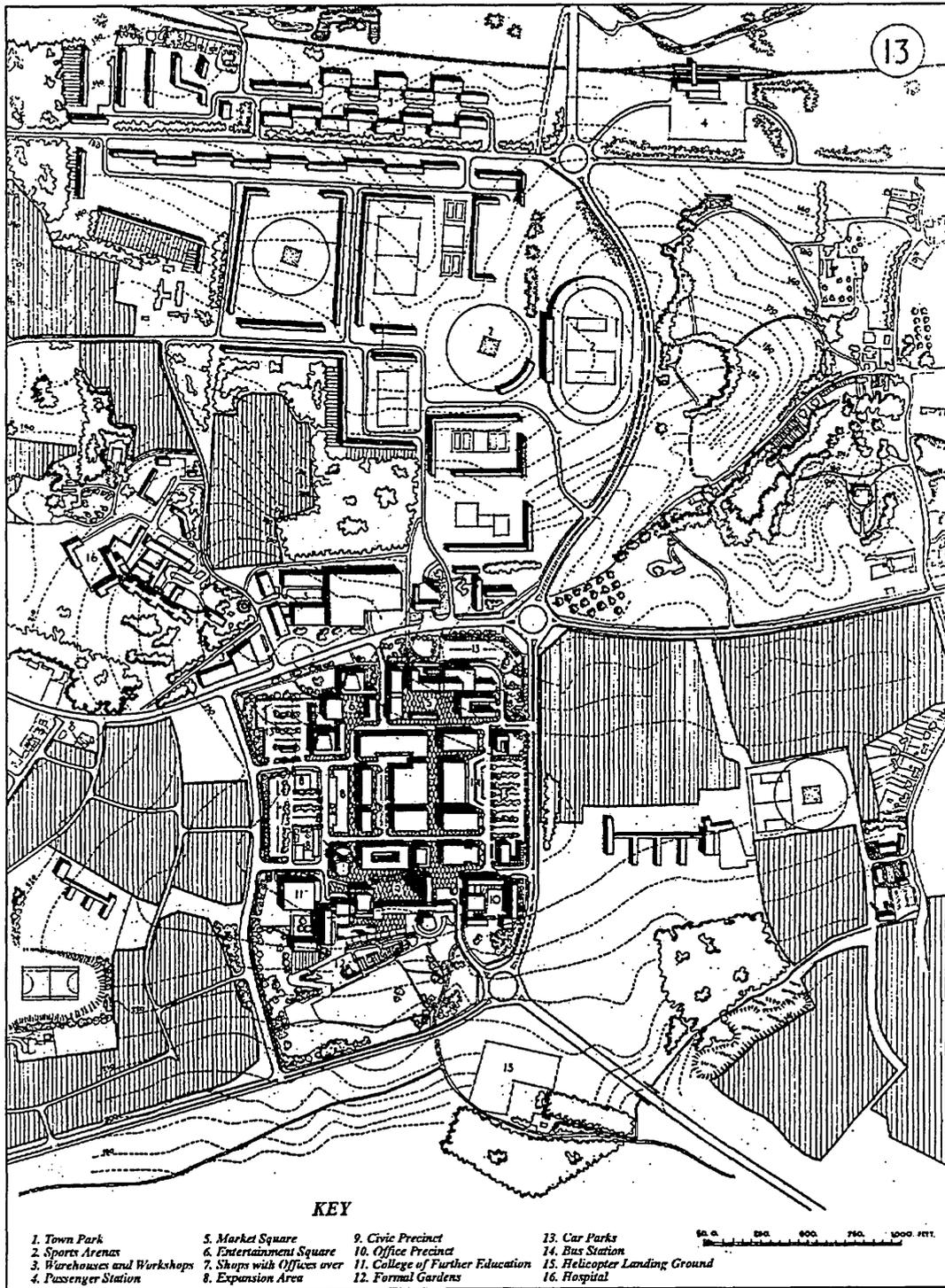


Figure 11b: Harlow new town: the station and the town centre.



Plan of Central Area

Sources: Gibberd, 1947

extensive as it was, the programme could not meet all the demands. The Conservatives had no intention that it should in any case as they preferred the other element of Abercrombie's strategy, the expansion of existing towns, to be facilitated by the Town Development Act of 1952⁵. So, many authorities had to use their own peripheral land or negotiate with other local authorities to acquire land and build overspill estates and town expansion schemes.

All cities had good public transport systems at the beginning of the period, often including extensive tram and trolleybus as well as bus and railway networks. But the upgrading of the tramways was not pursued, even though many of the 1930s peripheral estates had been served by extensions: closure programmes were drawn up and it was not unusual for local planning authorities to initiate these (Sheffield Transport Department, 1960, 27). This was because it was felt that trams were dangerous, owing to passengers boarding in the middle of the road, and a restriction on traffic circulation. But at least the inner districts had good bus services: their residents had never been regular users of the railways in provincial cities in any case.

The primary role of the first generation of development plans was to manage the land-use aspects of this housing renewal process: rezoning the redevelopment areas so as to separate housing from incompatible uses, and identifying green field sites for new estates. By and large, there was little consideration of the public transport needs arising from the location and density of development, despite the obvious potential which such compact housing forms had for association with railway systems. The mind set of BR meant that there was little attempt to engage with this process in any case. The political priority of the city councils was to build housing units, although because of the importance attached to road building and the fact that many development plans were produced within highways engineer's departments, alignments for new roads were accommodated as they had been in the wartime plans which informed the planning process. The County of London Development Plan (LCC, 1951, 8) was typical in that its only reference to railways was to locate and zone operational railway land.

The Clyde Valley was a significant exception as the BTC produced a report (BTC, 1951) on the network and, as in London, the committee which produced this was chaired by Inglis and their terms of reference required them to be mindful of

⁵ This was facilitated by the fact that a bill was already under preparation by the previous administration (Hall and Ward, 1998, 56). The Scottish equivalent, the Housing and Town Development (Scotland) Act 1957, was utilised for the decentralisation of Glasgow overspill population.

Abercrombie's plan. This was embraced enthusiastically and the report researched into experience on the network in the inter-war years and noted the increases in rail ridership at townships which experienced population growth, in a context where ridership generally had fallen; three new stations had in fact been opened to serve Glasgow City Council housing estates in 1949. The report, therefore, accepted the need to integrate railway and land-use planning by building new stations quickly to serve new developments, and by electrifying the local network to the north and south of the Clyde. In addition, it was recommended that municipal bus services and those operated by the BTC (Scottish Bus Group) should feed into rail hubs.

The reality of statutory planning in Glasgow was in stark contrast to the boldness of Abercrombie and Inglis: the draft City of Glasgow Development Plan was produced in 1951 and, like the Bruce plan, sought to solve the city's housing problems within its boundaries through a combination of 29 comprehensive development areas (CDAs) and peripheral housing developments; the only transportation element of any significance was an extensive new road network. At the public inquiry Abercrombie expressed his bewilderment as to what the written statement was all about and considered that the city's approach was 'contrary to the spirit of the Act' (MHLG, 1953, 728-729). This situation graphically illustrated the limitations placed upon the planning system by embedding it within local government: this prevented the development of more strategic approaches which might have more easily linked a land-use strategy with a rail network plan.

In the mid-1950s, despite plans for Government investment in the railways (see below), planning ideology with regard to rail transport remained unchanged. For example in the master plan for the one new town designated in the period, Cumbernauld, the designated area only had a railway line along its southern periphery. The town centre, despite being an innovative multi-level, high density structure, was remote from the station, as was most of the proposed settlement (Cumbernauld Development Corporation, 1958). Even in the South East, a plan by the LCC for a high density new town at Hook for 100,000 people, also placed the station on the periphery of the town, remote from the proposed town centre (LCC, 1961). However, the projected expansion at Basingstoke from 26,000 to 76,000 which was substituted for the abortive Hook plan, was focused around the existing town centre with its centrally placed station. But this was more a product of Victorian inheritance than conscious rail-oriented planning (Butler, 1980). By the early 1960s the planning process managed the remarkable feat of designating a site for

Skelmersdale in south Lancashire, with its complex network of railways, with no rail access at all (Skelmersdale Development Corporation, 1964).

Roads, cars and suburbs.

Not all public sector housing in the period was Modernist and the new towns, in particular, were a test bed for the development of Garden City ideology. As well as using traditional, two storey house designs, the concept of the neighbourhood unit had always been important to the Garden City movement and it was shown in chapter two that, historically, these had been associated with the development of railway suburbs. However, in the post-war era it was the needs of motor traffic which attracted the planners' attention and the concept was appropriately updated (Tetlow and Goss, 1968). The neighbourhood unit:

..... was an American idea developed in the 1920s by Clarence Stein and others who were strongly influenced by the work of Unwin and Geddes. The elements of the neighbourhood unit, which were applied (though the scheme was not finished) at Radburn, NJ, as well as a few other places, were derived from Unwin's cul-de-sac layout of house at Hampstead Garden Suburb and other early Garden-City type settlements. They were linked with modern road planning ideas to form the main components of the unit: 'superblocks' of houses encircled by distributor roads, on which the houses were turned inwards; the segregation of pedestrians and vehicles; and a network of pedestrian routes, including 'green spines' which linked the superblocks (Ravetz, 1980, 51-52).

Attlee's Government envisaged the public sector taking the lead in house construction, and this was the case until the late 1950s. But rising incomes made home ownership more accessible and rising property values made it financially attractive too. Private housing became increasingly important and construction companies acquired land speculatively and then pressurised the planning system to grant permission to build. The Garden City movement had wetted the public's appetite for low density houses with gardens and this had fuelled the suburbanisation process in the 1930s, but private builders had jettisoned the carefully crafted designs and created the sprawl which had fuelled the calls for effective planning. The process began again, and despite planning control, the quality of the new suburbia was heavily criticised by contemporary commentators:

..... by the end of the century Great Britain will consist of isolated oases of preserved monuments in a desert of wire, concrete roads, cosy plots and bungalows. There will be no real distinction between town and country Upon this new Britain the Review bestows a name in the hope that it will stick: SUBTOPIA (Nairn, 1955,365).

The builders favoured greenfield sites uncomplicated by ground problems. As the houses were built for sale, they were aimed at more affluent households who, increasingly, were car owners and this was becoming of increased locational significance:

The other vital environmental factor (in addition to newness of housing and location RH) was how housing was connected physically to the rest of the city. In a period of declining public transport this meant, in effect, whether a household had only a house, or a house-plus-car (Ravetz, 1980, 152).

This need to make private housing attractive to car owners affected layout design. The speculative builders rarely used architects, relying on a small selection of standard house plans. As qualified planners were thin on the ground, it was often highway engineers who designed estate layouts and their primary consideration was vehicle circulation: the principles underlying this were developed into official guidelines by the mid-1960s (MoT, 1966a).

From the mid-1950s there was relentless pressure, from within local authorities and by private builders, for the release of greenfield sites. Although this demand had to be met, in part if not in full, what planning authorities could do was protect good quality farmland and prevent the ribbon and sporadic development which had characterised the inter-war years. One of the tools which they began to utilise was green belt, officially introduced by Duncan Sandys (MHLG, 1955), wherein there would be a blanket presumption against development which would either have to locate between existing urban peripheries and inner green belt boundaries, or leapfrog over the green belts to sites outside them. In Greater London the latter typically included the new towns but, increasingly, housing came to be provided by the private sector in estates built on the edge of existing towns and villages.

Although it often took many years for green belts to be formally adopted within approved statutory development plans (Elson, 1986), they were employed around all the major conurbations as well as historic towns such as Oxford, Cambridge, York and Chester. They came to have significant impacts on transport, as will be shown.

Railway modernisation.

There was increasing awareness in the BTC of the competition from road transport and a realisation that diesel and electric power were an urgent necessity. With investment plans already in place for other nationalised industries, the Government looked to the BTC to produce one too. This was done within 6 months by a Planning Committee comprising headquarters staff and regional managers: there was no one from outside the BTC empire, not even customers. The Modernisation Plan, as it was popularly known, was approved in January 1955 (BTC 1955) with a price tag of £1,240 million. It included proposals to replace steam locomotives, including electrification of the East and West Coast Main Lines (ECML,

WCML), and certain suburban services in London and Clydeside: for the latter the Inglis Report was specifically referred to, the only reference to a previously published planning document in the whole Plan.

With regard to land requirements, the major impact was the programme for closure of 150 freight yards and construction and/or reconstruction of a network of 55 large marshalling yards to expedite the handling of wagon load traffic. The new yards were planned to incorporate humps and speed retarders to allow automatic remarshalling of trains with minimum use of locomotives and manpower (Allen, 1966; Fiennes, 1967). There is no disputing the fact that there was a major problem of outworn infrastructure and archaic working practices (Rhodes, 1988, 10), but a freight strategy needed a much more incisive appraisal of future demand for rail freight, and this should have been clear at the time. Back in 1944 Abercrombie, hardly an expert on railway matters, had alluded to the importance of containerisation for example. Wagon load traffic was already being lost to road haulage with its door-to-door service and diminishing journey times, but there was no fundamental debate within the BTC as to whether there should be a more selective approach. Debate focused on whether the new yards should be within conurbations and close to traffic generators, or at major junctions on the trunk routes, such as Carlisle (Fiennes, 1967). Only weeks after the Plan was published, the MoT announced a four-year scheme of road improvements, including £212 million for motorways.

A similar situation developed with regard to investment in locomotives where the intention was to phase out steam in 15 years. The Regions were given their head⁶ and, just like the old days of the Big Four, each had its pet designs: so after the drought came the deluge with too many locomotive types, no standardisation, and many failed designs⁷. In one respect though there was evidence of awareness of the importance of the views of customers as Sir Brian Robertson set up a 'Design Panel' in 1956, 'to advise on the best means of obtaining a high standard of appearance and amenity in the design of its equipment'.

As the introverted culture of the BTC and institutional arrangements did not provide good links with other agencies, such as local planning authorities, who were implementing their vision of the future (not well informed about the railway network), the BTC was poorly placed to develop a strategic vision for the railway system in the

⁶ Encouraged by the Government's liking for historic continuity, the Western Region, for example, had already embarked on a programme of painting its carriages in GWR 'chocolate and cream'.

⁷ The new traction fleet was to include electric and diesel-electric locomotives, and diesel and electric multiple units (DMUs and EMUs), with a small number of diesel-electric multiple units (DEMU).

context of rapid socio-economic and land-use change. The overall strategy was driven by the aspirations of the engineers who maintained and operated the railway and did not address the shortcomings of the geography of the network identified at the end of chapter two. As a result the strategy was deeply flawed:

.. apart from the modest proposals for passenger withdrawals, and the closure of a number of goods depots, the modernisation plan set out to rebuild the existing railway, whether there was a demand for its services or not (Joy, 1973, 44).

Or to put it in the rather plainer language of one of the few contemporary railway managers to commit himself to print: 'We had made the basic error of buying our tools before doing our homework on defining the job' (Fiennes, 1967, 77).⁸ In addition the financial impacts of key matters such as rising labour costs were overlooked (Joy, 1973, 48).

As the saga of the Modernisation Plan unfolded it did nothing to reassure an increasingly sceptical Government, and senior civil servants became distrustful of BR's managerial capabilities. BR went into deficit in 1956, a position from which it never recovered. It was the concern over its finances that led the BTC to bring forward more lines for closure and these began to attract organised public opposition. The protracted closure of the East Grinstead to Lewes line between 1955 and 1958 was a notable example: this was taken over by preservationists becoming 'the Bluebell Railway'. However, 1958 also saw the closure, with minimal opposition, of the longest route considered by the TUCs up to this time, the former Midland and Great Northern Joint Line between Spalding and Great Yarmouth. Although the rate of closures increased, the public mood was still relatively passive compared with what was to come.

London Underground.

At this point it is necessary to make a brief diversion to consider the London Underground as certain issues arose which were of wider relevance. This emerged from the war in the same rundown state as the main line railways, although ridership in 1948 was above inter-war levels (Barker and Robbins, 1976, 339). From the start the BTC made it clear that its priority was the main line network and London's needs would have to be funded from other sources. London Transport therefore had to develop investment cases sufficiently convincing to prise money out of central government. The Victoria Line saga serves to illustrate the sort of arguments used and the difficulties involved in raising funds on this basis. It had its roots in Route 8 of the Inglis Committee report and first appeared as Route C in the London Working Party's report of 1948. The proposal marked a significant change in Underground

planning as, unlike the suburban extensions of the inter-war years, this was a new route under the central area. Previous funding mechanisms had included straight commercial profit and, between the wars, Keynesian inspired demand management (the New Works Programme). In the post-war period railways could not be built as straight commercial enterprises, and there was a labour shortage. Therefore the wider benefits of railway investment which could not be captured through the fare box would have to be taken into account if new investment was to be justified⁹. Cost benefit analysis techniques were developed to inform the appraisal process for the Victoria Line involving complex socio-economic analyses which were so innovatory and wide ranging (Beesley and Foster, 1965) that they slowed the decision-making process down considerably. The handling of the Victoria Line proposal therefore:

shows characteristic features of public handling of investment projects in mid-twentieth century Britain: general acceptance of the intention as desirable; delay for argument on constantly changing bases; final approval under temporary pressures which were largely irrelevant to the arguments (Barker and Robbins, 1976, 344).

What is significant with regard to the ideological context for planning, is that this project marks the first utilisation of welfare economics to underpin railway investment. This became very significant as events unfolded, and would be used to justify not just *construction* of new railways, but the *operation* of a significant part of the network. In addition, cost benefit analysis showed the significance to the viability of railways of securing property development around stations.

The railways in crisis.

Owing to the onset of recession in 1958 and growing competition from road transport, railway losses increased. The costs of the BTC's most prestigious project, electrification of the WCML, were escalating from an estimated £75M to £165M and its completion was brought into doubt. Government began to ask difficult questions about the return on investment and other major projects, such as ECML electrification, were abandoned. The report on British Railways by the Select Committee on the Nationalised Industries (Select Committee, 1960) explored the principles¹⁰ which should underpin the management of the railway network and, in particular, recognised that certain services could be run on commercial principles, whilst others could not. The Committee advised that it may well be in the public interest to underpin the costs of the latter: the important point was to have clarity of

⁸ Fiennes was in fact sacked in 1967 after publication of his book which contained reflection on and informed criticism of railway policy.

⁹ The development of the motorway network ran into similar difficulties with regard to choosing which route to build from several alternatives: the problem with motorways was more fundamental as they were to be toll-free and would generate no direct income (Coburn, Beesley and Reynolds, 1960)

purpose and transparency of accounting. This constituted the first articulation of a new approach to financing the railways and eventually, along with cost benefit analysis, became part of the ideological bedrock of a new funding regime.

The review process which Marples had set in motion reached its conclusion in 1963 with publication of Beeching's 'The Reshaping of British Railways', popularly, or perhaps unpopularly, known as the Beeching Report. There was an objective need for some incisive thinking, but transport policy under Marples had developed on the basis of ideological commitment to road transport and a reductionist stance towards the railways. Far from any desire to develop a balanced and integrated transport policy, there was a simple goal of cutting back the loss making railway system as far as public opinion would allow. However, notwithstanding the shortcomings of this ideological context, Beeching tried to apply a structured and analytical approach to the railway problem (figure 12).

Figure 12: Beeching's approach to railway rationalisation

The logical approach to the problem of shaping, or reshaping a railway system is:-

- a. to determine the basic characteristics which distinguish railways as a mode of transport;
- b. to determine under what conditions these characteristics enable railways to be the best available form of transport;
- c. to determine to which parts of the total national pattern of transport requirements these conditions apply;
- d. to shape the railway route system and services so as to take advantage of favourable circumstances wherever they exist.....

Railways are distinguished by the provision and maintenance of a specialised route system for their own exclusive use. This gives rise to high fixed costs. On the other hand, the benefits which can be derived from possession of this high cost route system are very great.

Firstly, it permits the running of high capacity trains, which themselves have very low movement costs per unit carried. Secondly, it permits dense flows of traffic and, provided the flows are dense, the fixed costs per unit moved are also low. Thirdly, it permits safe, reliable, scheduled movements at high speed.

In a national system of transport we should, therefore, expect to find railways concentrating upon those parts of the traffic pattern which enable them to derive sufficient benefit from these three advantages to offset their unavoidable burden of high system cost (Beeching, 1963, 4).

The basis was to test, as quantitatively as possible, how far the operation of the railway departed from these conditions. The report analysed different traffics and routes to identify the costs and income of each. The results were very revealing showing that one third of route mileage carried only 1 per cent of passenger miles and 1 per cent of freight tonnage. Roughly half the network could be seen as losing money, whereas the most heavily used part showed substantial returns. The lightly used part included most of the single track branch lines, of which there were 5,900 miles. The Report also produced data showing that only express passenger services

¹⁰ The relevant extract from the Committee's report is in appendix eight.

and coal traffic were profitable. London suburban services approached profitability but local passenger services in other conurbations were major loss makers. Beeching identified the high costs and poor competitiveness of wagon load freight and highlighted the need to develop train load business (siding to siding flows with no marshalling en route) and to develop new freight handling technologies such as containerisation.

Given that there was contemporary awareness of the failure of the Modernisation Plan to take into account the future impacts of changes in transport geography, it would have been reasonable to expect that Beeching would have considered their impact on potential demand for railway services. He only mentioned this briefly and it was soon dismissed:

No novel assumptions have been made about the future distribution of population and industry in the country as a whole.

..... Therefore, in formulating proposals for line closure, all the Railway regions have taken account of any developments which are sufficiently specific to be probable, but have not been influenced by quite unsupported suggestions that something might happen some day (1963, 56).

Beeching's brief was to consider then current levels of traffic in shaping his proposals and he, in fact, considered his closure proposals to be restrained. His recommendations were a mixture of good and bad news, but undoubtedly it is the bad which has entered national folklore. This included: the withdrawal of many passenger and freight services; the targeted closure of 2363 stations and freight depots and 5000 route miles; a tactical withdrawal from the seasonal holiday business; a dramatic reduction in the amount of rolling stock; and the possible withdrawal of provincial commuter services. However, the good news, which underpinned the development of more successful traffics, included: the selective improvement of inter-city passenger services; co-ordination of suburban train and bus services and charges, in collaboration with municipal authorities; the development of siding-to-siding 'block' trains and the development of a network of 'liner trains' carrying intermodal containers between a limited number of mechanised terminals; the accelerated replacement of steam engines by modern locomotives.

Criticisms of Beeching.

The major objections to the 'Beeching Axe' focused on the lack of regard for the social role of the railways:

The application of strict economic principles of pecuniary demand and cost (au Beeching) emphasises this anti-democratic influence (of the motor car RH) ... the purely monetary calculus of demand and supply has a definite bias against public transport (Dickinson, 1964, 6).

Also there were technical objections to some of the techniques and costings used to underpin the plan. The Railway Development Association (RDA)¹¹ developed two main criticisms around the issues of contributory revenue and operating costs¹². The RDA argued that with modern traction and concerted efforts to reduce operating *and* track costs, the case for retention of many lines could be greatly strengthened as compared with Beeching's presentation of 'the facts'. Criticism of Beeching's methodology included the significance of only counting ticket *sales* at stations and not numbers of passengers *arriving*: this was felt to tip the scales against branch lines because these served seaside resorts and so on which were more likely to be destinations than origins. Similarly there was criticism of the timing of the collection of passenger figures, this being over a single week in April 1961, two weeks after the Easter holiday and hardly the peak of the tourist season. Critics felt that branch line operating costs tended to be overstated: Beeching was seen to take a dogmatic view of track costs as fixed and not susceptible to significant cost reductions. This was something that Fiennes (1967) pursued in rural East Anglia: the basic railway with single track, automatic level crossings, minimal signalling and unstaffed stations. However in later closure hearings Beeching's estimated costs were sometimes quoted to try and demolish closure arguments put forward by overly zealous railway managers (Henshaw,1991, 159).

If the social cost arguments can be seen as coming from the liberal, pro-public transport social welfare lobby, and opposition to specific closures as coming from rail passengers, criticism of Beeching also came from a more unexpected source, conventional economists:

...vital years were lost while the management shunted round looking for excuses when it became obvious that the Beeching prescriptions were not even relieving the symptoms, let alone curing the disease. Straight talk and analysis in 1962 could have saved much wasted effort later, by directing scarce management resources into areas of really high pay-off, instead of scratching for negligible returns in trying to close rural branch lines. By this I mean areas such as:

1. Maximising the profits from the Inter-City passenger business ...
2. Obtaining continuous true improvements in labour productivity ...
3. Demanding improved performance from the non-rail subsidiaries..
4. Commencing a fundamental analysis of the future of the freight business...
5. Getting the capital structure right (Joy,1973, 79)

¹¹ The RDA had been formed in 1951 to argue the case for the development of modern lightweight diesel railbuses and multiple units to sustain retention of the branch lines.

¹² Contributory revenue is the contribution to income on the trunk routes made by traffic feeding from the branch lines: if the latter are closed then the trunk services lose traffic.

Despite the criticisms, Beeching had many supporters amongst railway managers as, coming from industry, he had no particular axe to grind, and he introduced a market oriented culture¹³ which promised a way out of the financial crisis:

How did we, the railwaymen, react?Most of us shrugged and got on with the job for we knew, although things would never be the same again, that Beeching was right (Hardy, 1989, 83-84).

Town planning and road transport.

Contemporary publication of Buchanan's 'Traffic in Towns' (MoT, 1963) reflected the Government's rising expectations with regard to the role of the private car. Marples had already increased the target for motorway construction from 800 to 1000 miles by 1972. However, the environmental problems associated with road traffic were recognised in the wartime plans and had been more rigorously analysed subsequently (Smeed, 1961). It was accepted that some sort of balance had to be struck between accommodating road traffic and protecting the quality of urban life.

Buchanan's terms of reference were:

to study the long term development of roads and traffic in urban areas and their influence on the urban environment (MoT, 1963, 7).

It was clear that this was not to be a multi-modal view of the urban transport problem: the Buchanan and Beeching Reports were mutually exclusive. Nevertheless, there were a number of points about the former which make it worthy of discussion. The commissioning of the report resulted from recognition of the predominance of road traffic and the statistics which summarised that fixed the context of the contemporary policy debate:

...in 1959, road travel represented 81% of all inland passenger travel. Of all inland goods transport (during 1958), about 72% by tonnage or 45% by mileage, was by road (Buchanan, 1963, 12).

Buchanan demonstrated that car ownership would increase substantially over the following ten years and a significant increase in road space was necessary, even if only a part of the increased demand was to be catered for. He was well aware of the negative effects of motor traffic arising from congestion, accidents, noise, and atmospheric pollution. As Buchanan saw it, society had to decide what levels of external costs it was prepared to tolerate, and implement the balance of road building and vehicle restraint necessary to achieve those levels. The Buchanan Report represented the maturing and coalescence of professional ideologies which stretched back many years: the use of hierarchical road systems of the sort that the traffic police (Tripp, 1942), civil engineers (Bressey, 1937) and planners

¹³ The language used in the BRB annual reports characterised this and progressively through the mid and late 1960s embraced terms like 'market research', 'product', 'product development', 'branding' and 'market sectors'.

(Abercrombie, 1944) had proposed; construction of limited access motorways in urban areas on the American model as advised by municipal engineers (Manzoni,1940); and reconstruction of city centres using multi-level structures as proposed by architects (Tatton Brown and Tatton Brown, 1941, 1942). There was nothing remotely like this sort of professional ideological convergence around planning for the railway network.

Stemming from his sensitivity to the negative aspects of motor traffic, Buchanan developed the concepts of the 'environmental area' and 'environmental capacity' which were defined as:

Environmental area - an area having no extraneous traffic, and within which considerations of environment (in the specialised sense, as defined) predominate over the use of vehicles.

Environmental capacity - the capacity of a street or an area to accommodate moving and stationary vehicles having regard to the need to maintain the environmental standards.

Overall Buchanan's message was subtle: increased road traffic could be accommodated, but there would be an environmental price to pay and society had to decide what the limits should be. However, the problem with his environmental concepts is that they were just that, concepts, which were not operationalised and were thus vague and subjective.

Despite his brief, Buchanan made a number of significant references to public transport, the need to integrate different transport modes, and to integrate transport and land-use planning. He also suggested that development plans needed to be supplemented by statutory transportation plans, concluding that:

In the long run the most potent factor in maintaining a "ceiling" on private car traffic in busy areas is likely to be the provision of good, cheap public transport, coupled with the public's understanding of the position (MoT, 1963, 193).

The report contained some interesting references to the use of railways and street trams as part of integrated transport and planning strategies, particularly in Germany and Sweden. Stockholm was noted as a city where the railway network was being developed along with road building, in line with the plan from 1941:

It is very significant that a city of this size should have found it possible to finance the construction of an underground system, and to reach the bold conclusion that in the general public interest it should be a subsidised undertaking (MoT, 1963, 177).

But Buchanan's message was too subtle given the political realities of the time: a huge development machine was rolling and it was not susceptible to the niceties of his arguments:

Behind Buchanan came the traffic engineers with their plans for urban motorways: hundreds of miles for London, similarly vast networks for every provincial city (Hall,1988, 316).

The report's major impact was that the leadership of civil engineers in urban transport planning was reinforced and they utilised the new computer technologies to model¹⁴ traffic flows in a new generation of 'land-use transportation plans': the vacuum left by the failure of the integrated transport paradigm of the 1940s was filled by 'predict and provide' and accelerated road construction. The outcome was most typically characterised by events in Birmingham, where the plans developed by Manzoni dovetailed with the MoT's plans for the national motorway network, to unleash an amazing burst of activity. At the time this had the support of politicians and most of the public.

Railway investment in the 1960s.

Publication of the Trunk Routes report, BRB (1965), was, as Beeching saw it, the logical and positive concomitant to the Reshaping Report. The problem with the 7,500 miles of trunk route was the historic one of duplication: with declining traffic and the potential for increased capacity through modernisation, there was an obvious need to make choices. Beeching set out his usual methodical approach as shown in figure 13.

The report was notable for its 27 maps showing the relationship of the recommended core network of approximately 3,000 miles to major traffic sources such as power stations, oil refineries, steel works and coalfields, as well as the relative population densities of the conurbations. In keeping with the optimism of the time, there was an

Figure 13: Beeching's approach to trunk route planning.

Examination of the present pattern of trunk transport of freight on rail, in relation to the national demand for freight transport between main centres, and of the present inter-city flows of passenger traffic.

Consideration of those changes in the national economy and in the disposition of population and industry which are likely to affect the future demand for public transport, and in particular, rail transport.

Assessment of the probable pattern of transport demand between main centres by 1984, and of the traffic flows favourable to trunk movement by rail.

Consideration of the potential capacity of rail trunk routes when developed technically and operated in the manner best suited to the types of traffic foreseen.

Selection from existing routes of those which can best be developed to provide the network and capacity required to handle the future trunk traffic demand (BRB, 1965,9).

¹⁴ In the 1960s the use of theoretical models such as the gravity model and quantitative techniques to represent transport networks and settlement patterns, caused a paradigm shift in human geography, a subject closely allied to planning (Haggett, 1965).

assumption of an annual 4 per cent growth rate in the economy, and of a 15 per cent rise in population by 1984. Beeching was attentive to the work of the planning system and quoted from a contemporary study:

“The South East Study 1961 - 81”, which deals with the growth and distribution of population and industry in the South Eastern Region, was issued last year by the Ministry of Housing and Local Government. One significant feature of this report, and of the White Paper (Cmnd.2308) which accompanied it, is the evidence which it provides of the strong urge of the Government to damp down the main migrational movement which is apparent at the present time, namely the migration to the South East (BRB, 1965, 15).

From his consideration of these matters Beeching made two important assumptions which underpinned his strategy:

In relation to population it was assumed that the rate of growth would be comparatively even throughout the country and that no major redistribution would take place. In relation to industry, although some change was foreseen in the commodity pattern of production, the assumption was made that the geographical spread of general industrial activity would remain the same, and that growth would be uniform throughout the country (BRB, 1965, 16).

Therefore an attempt was made to accommodate some of the factors influencing demand for railway transport in the long term, but one issue conspicuous by its absence was road traffic congestion: there was no connection with the Buchanan Report. Overall Beeching painted a rather pessimistic picture of the potential for rail passenger traffic and saw it as squeezed between competition from the airlines, for journeys over 200 miles, and from road transport over distances below 100 miles:

It is estimated that the total volume of demand for inter-city travel on rail will fall slightly from its present level.... (BRB, 1965, 32-33).

Beeching's vision did not encompass development of high speed trains, despite contemporary development of the Japanese Shinkansen (Allen, 1965). He did countenance the possibility of a Channel Tunnel, but raised no specific expectations about its impact on traffic. The issue of the vertical loading gauge was not addressed although its constraining impacts on carriage of freight, particularly intermodal traffic, were recognised (Calvert, 1965, 41-47). The report was Beeching's swan song as by mid-1965 he was back at ICI, four years after he left. He was succeeded by a career railwayman, Stanley Raymond¹⁵: the quantum change in railway policy was complete.

Regional planning in the London and the South East.

On its return to government in 1964, Labour had no coherent transport policy but was resistant to the Beeching closures. The new government was marked by a commitment to accelerate slum clearance which, along with the need to

¹⁵ Raymond's salary at £12,500 was just over half of Beeching's.

accommodate economic and population growth, set the scene for a period of intensive strategic planning, typified by several plans for London and the South East as shown in figure 14.

Figure 14: Strategic plans for London and the South East.

- 1 'The South East Study', (MHLG 1964), (obviously this had been under preparation by the previous Conservative Government);
- 2 'The Conference Area in the Long-term', by the Standing Conference on London and the South East Regional Planning, (Standing Conference on London and the South East Regional Planning, 1966); (the Standing Conference was a voluntary grouping of all the local planning authorities in the region, and became known as SERPLAN)
- 3 'A Strategy for the South East', by the South East Economic Planning Council (South East Economic Planning Council, 1967); (this was one of a number of Regional Economic Planning Councils set up by the Labour Government reflecting the renewed commitment to economic and land-use planning: Peter Hall was a member)
- 4 'Strategic Plan for the South East', (South East Joint Planning Team, 1970) produced by an independent study team set up by central government under the direction of the Chief Planner at the MHLG, Dr Wilfred Burns.

One of the major issues with which these wrestled was the location of major growth areas and their relationship to London. Experience showed that these would have to be larger and further from London than first generation new towns if they were to meet the needs of a growing population and achieve a higher degree of independence. With planning at this scale there were crucial interrelationships to consider between development and transport infrastructure, so there was obvious potential to interrelate railway and land-use planning.

The 1964 South East Study envisaged the development of fairly small market towns such as Newbury and Ashford, but also substantial expansion of existing county towns such as Northampton, Peterborough and Ipswich. In addition a completely new city, much larger than previous new towns, was envisaged to the north of Bletchley (Milton Keynes), as well as substantial growth in the Portsmouth-Southampton corridor. This notion of the 'planned agglomeration', as opposed to the development of free standing settlements, was an idea which developed rapidly. In the 1967 Strategy for the South East three such agglomerations were envisaged: one at about 70 miles to the south-west of London in South Hampshire; one between 50 and 70 miles to the north-west of London based on Northampton-Milton Keynes; and a third area based on Colchester-Ipswich and the growing ports of Felixstowe and Harwich.

With regard to the development of planning models, in addition to the 'planned agglomeration' there was also the 'transport corridor' in the 1966 report:

Its authors argued that the concept of a self-contained town or community had broken down, to be replaced by the notion of different communities welded into an organised pattern of inter-relationships. Therefore, they argued, a study of communications and of movement patterns was fundamental to preparation of a strategic plan. This pointed to the fact that any plan must be related, first to plans for major regional, inter-regional and international routes, so that non-

local movements could be catered for efficiently; and secondly, to developing clusters of settlements closely related to transport routes. They concluded:

“This may point to the advantages of establishing corridors (on regional or sub-regional scales) in which road and rail routes and services would be closely associated with axes of urban development (existing and new)” (Hall, 1971, 190).

The 1967 Strategy for the South East utilised the agglomeration and corridor ideas, although the word ‘sector’ was used to indicate breadth as well as length. Four major sectors were envisaged radiating from London towards planned ‘counter magnets’ : in the direction of Southampton-Portsmouth, Northampton-Milton Keynes, Colchester-Ipswich, and Canterbury. Each of these was to be paralleled by a minor sector also leading to counter magnets, which in this case would be free standing towns, not agglomerations. These radiated from London towards Swindon, Peterborough, Basildon-Southend, Ashford and Brighton. The underlying transport rationale was undoubtedly the development of the motorway network, but the sectors were well related to main railway lines radiating from London too.

All the sectors mentioned appeared in the map of routes selected for development in Beeching’s second report (BRB, 1965, map 21), apart from the London to Canterbury/Ashford, and London to Southend sectors, which were commuter routes and did not fall into Beeching’s classification as trunk routes. Although the sector idea was a good one for building a broad strategic relationship between patterns of land development and strategic transport routes, it is interesting to note that they were defined solely in terms of their relationship with London. Their relationships to each other were not mentioned and there was no discussion of new orbital rail routes in these plans and no serious examination of existing rail services *between* the centres mentioned: this failure to relate railway and planning policy was criticised at the time (Allen, 1966, 38).

The final plan in the series emerged from the MHLG in 1970 (South East Joint Planning Teams 1970a)¹⁶. Coming at the end of a period of intense strategic planning activity and being produced as a result of a joint commission by the Secretary of State for Economic Affairs, the Minister of Housing and Local Government and the Minister of Transport, as well as the Chairmen of the Standing Conference and the Economic Planning Council, it is obvious that this Plan was of much greater standing than any of its predecessors and can be seen to represent the most interventionist and prescriptive strategy that the planning system could then achieve. A number of specialist studies were produced and Volume 3 (South East Joint Planning Team, 1970b) dealt with Transportation. Paragraph 1.4 of this

¹⁶ Although strictly outside the time period of this chapter this document is an integral part of the sequence of plans being reviewed here.

stated: 'There has been no previous transport study of this kind, or on this scale, in the United Kingdom,.....'.

The institutional context facilitated BR involvement in this study, which was a step forward, but the differing treatment given by central government to the road and rail networks was soon revealed:

Major road plans are already in hand for the period up to the late 1970's There was not comparable long-term commitment to the allocation of resources to railway improvements...(para 1.7)

Section 2 was wholly concerned with the railway system and the limited horizons were clear:

The rail network is considerably less dense than the road system. Changes over the last few years have been in the form, on the one hand, of technical improvements to infrastructure, traction and rolling stock and, on the other hand, of closures of lightly used sections. This pattern is likely to continue, because the network already covers the main corridors of movement, and because high utilisation - and therefore major urban development in an area previously not served by rail - would be needed to make entirely new lines an economic proposition. For the purpose of this study the Team have therefore been concerned with changes in the loading and operation of the existing network, as opposed to changes in its form...(para2.23)

Paragraphs 2.24 and 2.25 went on to look at the organisational structure of British Rail noting that, for the most part, it followed the geography of the routes radiating from London apart from a small number of cross country services such as Southampton-Reading-Oxford-Birmingham, and Southampton-Sevenside. Further comment was added about their quality:

In most cases the cross-country services offer a lower frequency of service than the radial routes, and in very few cases is it possible to make a cross-country journey of any length without changing trains.

So the historic problems associated with cross-country and orbital rail services were recognised, but the conventional wisdom was that this situation was not going to improve. Section 3 of the study looked at 'New Developments in Transport Systems' and the involvement of BR staff is evidenced by comment on the likely impact of improved signalling, automated control techniques and improvements in passenger handling. But the overall conclusion was downbeat:

The Team consider that these changes could lead to considerable improvements but doubt whether their impact on interurban travel will be significant.

The recommended strategy was that development should be steered towards a number of major and minor growth points. The major growth points were envisaged as eventually having a population of 1 million and included South Hampshire, Reading-Aldershot-Basingstoke, Crawley, Milton Keynes-Wellingborough-Northampton, and South Essex. The minor growth points were envisaged as eventually having populations of 0.25 to 0.5 million and included

Bournemouth-Poole, Eastbourne-Hastings, Ashford, Maidstone-Medway, Chelmsford, Bishops Stortford-Harlow and Aylesbury. This strategy was accepted by government as the basis for regional planning in the South East and brought a decade of frenetic strategic planning activity in the region to a close.

Regional planning in the provinces.

Outside the South East the need for regional plans was perceived to be less because of lower rates of growth and the spheres of influence of provincial cities were smaller than London's. Chapter two showed that, historically, the role of railways in the growth of provincial cities had been less too, so even where strategic planning did take place, there was comparatively little positive comment on the role of the railways. As an example of this, and because of subsequent events in the 1980s which are reviewed in chapters 8 and 9, it is necessary to consider the Nottinghamshire-Derbyshire Study (Nottinghamshire County Council, 1969)¹⁷. This was concerned with the changing socio-economic characteristics of Nottingham and Derby and industrial decline in the Erewash Valley coalfield along the county border. It was the problems in the border area, and the presence of the M1 Motorway along it, which instigated the joint exercise. There were two trunk railways through the area: the ECML running between Newark and Doncaster, and the Midland main line running from Leicester to Loughborough, with branches to both Nottingham and Derby which conjoined near Chesterfield en route for Sheffield. The Nottingham arm ran through the Erewash Valley. There were a number of mineral lines throughout the two counties mainly serving collieries, but the Beeching closures had removed the local passenger network focused on Nottingham, as well as the Great Central main line from Leicester, through Nottingham to Sheffield. Mansfield lost its service to Nottingham in 1964 and entered national folklore as the largest town with no rail passenger service. There were few references to railways at all in the Study, although it did demonstrate awareness of the potential for concentrating development in rail corridors, but discounted this as a viable option (Nottinghamshire County Council, 1969,78). The absence of an inter-city service to Mansfield was remarked upon in a way which demonstrated awareness of the strategic importance of this, and the lack of direct involvement by BR in the Study:

Inter-regional links are essential to the prosperity of a major urban complex and should not be sacrificed because of relatively minor operational difficulties for British Rail.

Commuter links into Nottingham are not what is sought, but a stopping place for inter-city express services British Rail have been asked to investigate these possibilities.

¹⁷ Although published just after the end of the period which this chapter reviews this study was carried out within it.

Planning ideology and the debate on urban form: the new towns.

With regard to broader ideological trends in planning, the car-based decentralisation which so concerned Clark (1958) led, in America, to a radical conceptualisation of this new type of urban form, 'the non-place urban realm' (Webber, 1964). This developed from sociological criticism of the planners' notion of the neighbourhood as a physical development form which had social significance: Young and Wilmott (1957) pointed out that people were members of many communities which could be based on family, workplace or leisure interest, as well as, perhaps, place. Webber developed this idea and said that, with developing communications technologies and the mobility offered by the car, the traditional city centre was losing its role as the central place where people needed to congregate for social interaction and access to goods and services. Technology offered the possibility for interaction without face-to-face contact, and the dispersal of activities throughout a motorway network would mean that there would be many sub-centres for such direct contact as would be required, all equally accessible to a dispersed but mobile population - the non-place urban realm.

Running contrary to this vision and, again coming from America, was a staunch defence of the traditional city and a fierce attack on what planners and architects had done to it. This was led by Jane Jacobs (1962) who celebrated the traditional, high density inner city suburb which was characterised by a complexity of human activity, characterised by walking and the use of public transport, typically a railway or subway system. The varied activity at street level - shops, cafes, restaurants, bars, workplaces and local service outlets - created a stimulating and singularly urban environment. There was no reason why such neighbourhoods should be seething slums as they had been portrayed.

In British planning circles, despite the commitment of central Government to road building, debate raged as to these visions of the future and their implications for design of the built environment, including the transport systems which serve it (Tetlow and Goss, 1965). As so often happened it was in the new towns that the ideas came to be developed and applied in their purest form. The Cumbernauld master plan was dominated by roads, but the designers drew from the experience with Radburn-inspired layouts in the first generation new towns and planned for a very high degree of pedestrian-vehicular segregation: the town centre design was the sort of structure endorsed by Buchanan. The new towns, including Cumbernauld and those designated later, were dominated by car-oriented transport planning during a period when resources for road building were abundant. As one of the engineers involved stated subsequently:

In the early years of their existence the Mark IIs and Mark IIIs¹⁸ laid down what are arguably the best, and certainly the most comprehensive, urban highway structures to be found in Britain (Dupree, 1987, 33).

It fell to the designers of Runcorn to produce a plan (Ling, 1966) which, by utilising a 'double circuit linear' form, structured development around a dedicated public transport corridor, albeit a busway. This was because the designers¹⁹ recognised that even with rising car ownership, there would always be a significant part of the population which would be dependent on public transport, so it made sense to embrace it as a core element of the design. The layout of residential neighbourhoods was focused around the need to provide easy pedestrian access to the centrally located bus stop. Runcorn's new town centre was to be a similar structure to that at Cumbernauld, with the addition of access by the busway.

Initial plans for Milton Keynes were for a high density monorail city but these were dropped in 1968 (Bendixson and Platt, 1992) and replaced by the, now familiar, system of grid roads with a dispersed pattern of land uses and limited density development so as to maximise vehicular mobility, whilst minimising traffic generation and the potential for congestion (Milton Keynes Development Corporation, 1970). It was recognised that the provision of public transport services would be difficult, but it was felt that technology would come to the rescue with a 'dial-a-ride' system. The plan came to be warmly endorsed by garden city traditionalists as a return to the original concepts of spaciousness, good landscaping and plenty of open space (Osborn and Whittick, 1977): the failure to plan around public transport was traditional too.

Planning ideology and the debate on urban form: city centre redevelopment.

Owing to post-war austerity there was little scope for planning authorities to act on the advice of the New Towns Committee (1946) or the Ministry of Town and Country Planning (1947) with regard to station design but, by the mid-1950s, the economy improved and town centre redevelopment became a significant focus of planning activity. There were many forces driving this: the need to make-good war damage; demand for new retail floorspace and the need for better access for delivery lorries; demand for private car access and parking; the need to resolve the increasing conflicts in city streets between through traffic, local traffic, buses, cars, delivery vehicles and pedestrians; and demand for new office buildings to house the

¹⁸ New towns designated between 1955 and 1970, those before 1955 are known as Mark Is.

¹⁹ The design team included Roy Cresswell, one of the few town planners of the period to specialise in the relationship between land-use and public transport networks: I was taught by Roy at the University of Nottingham between 1970-72. See Ling (1967) for a fuller discussion of Runcorn and the rationale behind the target of 50/50 public/private transport modal split.

growing service sector. Architecturally, this process was dominated by Modernism and, as so many of the issues had to do with traffic, highway engineers played a central role too: the Buchanan Report reinforced this engineering-led approach. Councillor T. Dan Smith was a member of the Buchanan Steering Group and his role in the dramatic redevelopment of central Newcastle which incorporated major road building plans, illustrated the close relationship between local government and the road lobby.

The case of Birmingham was particularly notable: chapter 2 showed that, although it was a major railway hub with a model network, rail commuting had not played a very significant role in its growth. Nevertheless, the potential was there. However, the post-war planning of Birmingham was masterminded by one of the country's leading civil engineers, Sir Herbert Manzoni, who considered that:

Unfortunately, the layout of the railway system is very meagre, and its use has probably tended to diminish rather than increase with the improving facilities for trams and omnibuses (Manzoni, 1940, 112).

Although he was well aware of the spatial demands of rising car traffic, Manzoni's thinking was totally road-oriented. But he was tremendously far-sighted and effective: under his auspices the City Council promoted a city centre compulsory purchase order (CPO) in 1946 beginning the long process of road building through acquisition, demolition, and reconstruction. The city's statutory development plan (City of Birmingham, 1960) was much concerned with problems of 'communication'²⁰, but the solutions embraced policies for the building of inner, intermediate and outer ring roads, link roads, by-pass roads and multi-storey car parks, with no mention of public transport. The only railway item of any significance was appendix 4 which listed 'Major Developments by Statutory Undertakers' and included rather cryptically: 'British Transport Commission - London Midland Region - New Street - Reconstruction'.

The CDA, one of the tools of the 1947 Act, was increasingly used to plan and implement large scale change which often involved the use of CPO powers to bring land into public ownership. This was deemed necessary so that local road networks could be remodelled and large retail and office buildings could be developed in an integrated way, along with multi-storey car parks. With such thoroughgoing change occurring there was plenty of scope to alter structural relationships between land-use and transport systems and, even within the context of improving vehicular access, rail access could have been improved too. Croydon is a good example of how the central area of a traditional market town grew rapidly as a result of massive planning-

led investment but, despite the excellence of its railway services, the design of the central area was overwhelmingly dominated by road-oriented ideology.

Ravetz (1980, 48) commented that two primary concepts which underpinned urban planning ideology at this time were concentricity and segregation. Concentricity went back to Howard's Social City and was an important element of Abercrombie's Greater London Plan, closely related to road proposals. The Ministry of Town and Country Planning had produced policy guidance (MTCP, 1947) for town centre redevelopment which was dominated by concern to improve traffic circulation by building ring roads. It was clear that this could have negative implications for access to railway stations by placing them on the outer side of such roads which would separate them from the town centre (figure 15).

Concentricity lent itself to the idea that different planning treatment should be given to different sectors and zones of cities, and that land uses should be segregated accordingly. For example, the design guide mentioned above found that of thirteen possible uses only four or five were permissible in town centres. Ravetz demonstrated how well fitted to each other were these planning concepts and the aspirations of architects and highway engineers:

The imperatives of traffic engineering were thoroughly compatible with architectural thought, which regarded obsolete street plans as the "root evil" of modern city planning (1980, 50).

Thus the planning approach to urban restructuring came to be founded on the concentricity of the road network. The segregation of land uses, particularly residential from workplaces, increased the need to travel, but the road-oriented ideology meant the process was likely to produce reliance on the private car and to reduce the convenience of rail transport. The only significant counter trend resulted from the activities of Railway Sites: the potential for securing development around main line stations, especially in London, was recognised and pursued vigorously, although the main aim was to secure cash income to offset the losses in the core business.

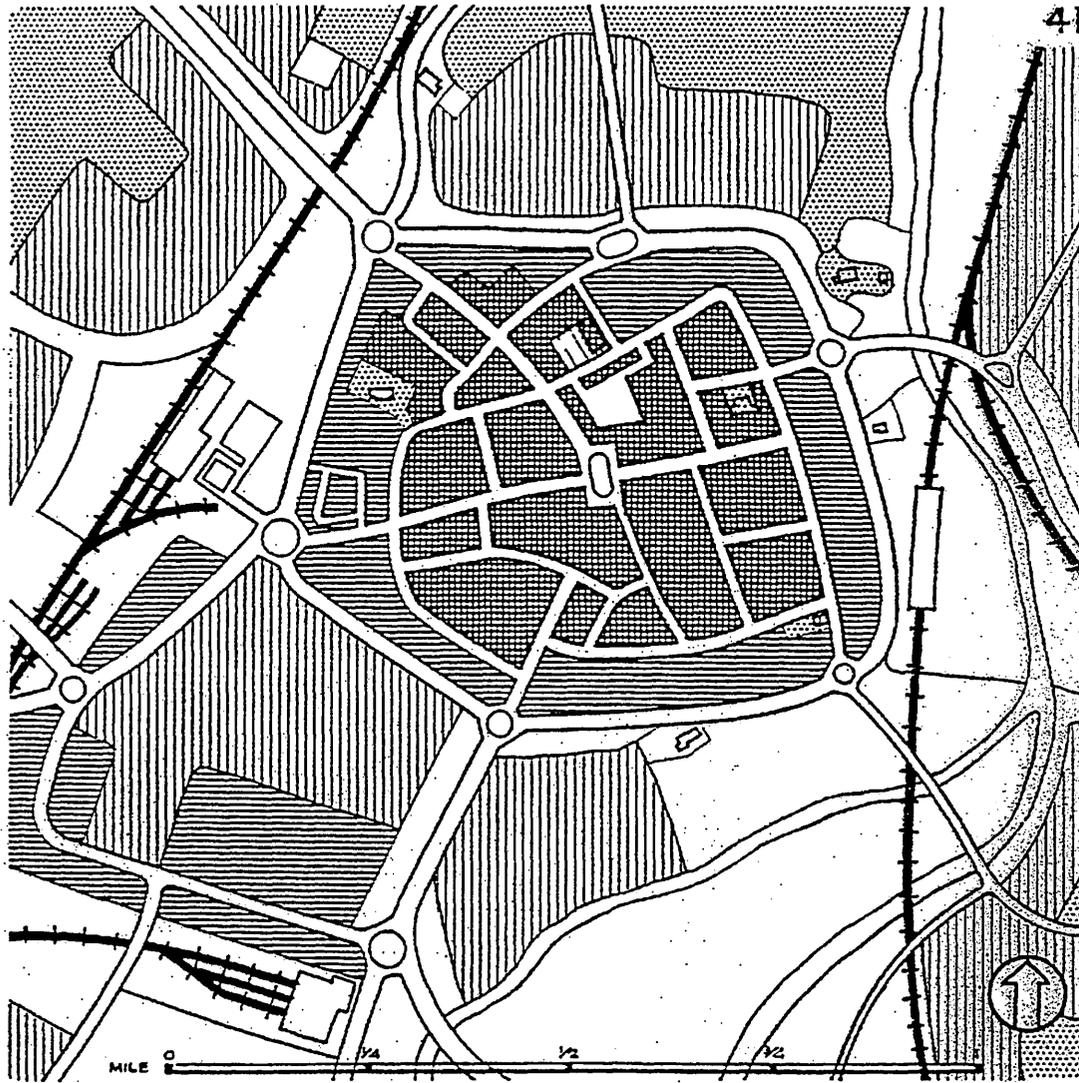
The social railway.

Despite their stated opposition to the Beeching closures, the trunk network was not secure from closures under Labour: in 1967 Castle produced the 'Network for Development' plan (MoT, BRB, 1967) which stated that the railway network, standing at 13,200 miles would be 'stabilised' at 11,000 miles, of which just 8,000 miles would be open to passenger traffic. This network comprised the profit making

²⁰ The written statement listed 17 'problems' with nos. 13-17 all concerned with communications.

Fig 15: Ministry of Town and Country Planning 1947: model plan for town centre redevelopment

SKETCH PLAN FOR THE CENTRAL AREA



CENTRAL AREA *proposed density of building*



Source: Ministry of Town and Country Planning, 1947.

trunk routes and the socially necessary commuter lines, along with a handful of rural routes. But:

The real shock came with the list of lines that fitted neither of the above categories It appeared that many supposedly "safe" secondary lines were to be swept away, as were the majority of the marginal branch lines (Henshaw, 1991, 189).

Political opposition to closures reinforced the use of rail's social benefits to justify public investment in infrastructure and the underpinning of operating costs. By the mid-1960s concern for 'the environment' was an emergent issue too (Galbraith, 1958; Carson, 1962) with the development of an economic critique of road traffic growth (Mishan, 1967). White Papers confirmed Government recognition of the continuing importance of the railway network and the need to put it on a sound financial footing. It was seen as essential to identify and secure financing of those lines which could not operate profitably but which should be retained in the public interest. In 1967 a special Economic Unit was set up in the MoT to do this: cost benefit analysis was now employed as a core policy making tool. Castle's new broom led to casualties in the BR hierarchy and Stanley Raymond was forced out in late 1967. She wanted new blood to take the industry forward and her preferred Chairman was Peter Parker. However salary terms could not be agreed and, ironically, Castle ended up with a 62 year old career railwayman, Henry Johnson: Castle herself moved on in April 1968.

The emergence of 'structure plans'.

In parallel with the paradigm shift which was taking place with regard to public transport policy in the mid-1960s, tremors were passing through the planning system and there was increasing debate about its successes and failures. It was clear that, under the Conservatives, the system had not been used as previously intended. One of the key points at issue was the relationship between forward planning and development control. There had been rapid economic growth from the mid-1950s with the ensuing property boom exerting tremendous pressure on the development control system. Development plans were supposed to set the context for this but often, owing to political and bureaucratic delays, they were not available as formally adopted plans. The finished product was often unsatisfactory too because their central feature was a zoning plan superimposed over an Ordnance Survey map. This detail, coupled with the impacts of planning decisions on property values²¹, meant that the focus of debate was at site level. The broad strategic issues were largely obscured.

²¹ Which had risen markedly during the period giving rise to a generation of property tycoons (Marriott, 1967).

A Planning Advisory Group (PAG) was set up in 1964 to review the situation. Membership was drawn largely from local government and was dominated by chief clerks and planners: although it included the Director of Highways and Transportation of the GLC there was no one from British Rail or the bus industry. The report (PAG, 1965) recommended that two types of plans should be produced: structure plans for quite large areas concentrating on strategic matters such as economic development, transportation, social welfare and demand for land. Location policy would not be site specific. These strategic plans would be supplemented by local plans which would be site specific, but could only propose patterns of development which were compatible with the structure plan. Significantly this report made no mention of railways. As a step towards implementation of the PAG report the Government produced a White Paper (MHLG, 1967): this drew attention to how the context for planning had changed since 1947 when expectations about population and road traffic growth had been modest. These changes to the planning system were introduced by the 1968 Town and Country Planning Act and will be reviewed in chapter seven.

Conclusions.

Although integrated transport was an important goal of Attlee's Government, it was poorly conceptualised and limited to matters internal to transport. Public ownership of an integrated transport system was not part of the post-war consensus and the Conservatives acted quickly to denationalise the road haulage industry. Once car ownership began to increase they were quick to see the implications and to make political capital out of road building plans.

Policy towards the railway network itself initially marked time, owing to austerity and the need for the organisational implications of nationalisation to be worked through. When investment plans came in the mid-1950s they were poorly conceived and backward looking, with no deep understanding of how the competitive position of the railways was changing, or how the network needed to be developed to accommodate socio-economic change. The rise of the road lobby and the escalating costs of railway modernisation combined to trigger Conservative plans for the undevelopment of the network. This was accompanied by development of a vision, albeit a limited one, for the core network: there was no aspiration for a Japanese-style high speed network, and no plans to improve the penetration of city centres by tunnelling or building urban metro systems. Although in opposition Labour had opposed the Beeching cuts, once in power they found it hard to stop the momentum of the closure process and, in any case, were supportive of the roads

programme. The critique of Beeching developed by his opponents tended to focus on matters internal to the industry, rather than any potential to reinvigorate lines mooted for closure through manipulating patterns of land-use change.

Chapter two demonstrated that, historically, there was an absence of railway-oriented thinking in British planning. This did not change in the 1947-68 period, although planning ideology did change dramatically. The public sector oriented ideology of planned decentralisation and self-containment of the early period was overridden by management of private sector suburban growth and town centre redevelopment, facilitated by road building. However, planning ideology was not completely devoid of concern for the railway network: in London and the South East, and to a much lesser extent on Clydeside; the geography of the network did influence strategic planning, particularly the location of new towns and growth poles.

The development of strategic planning in the 1960s strengthened the case to invest in the core network of radial routes serving London. But these interrelationships between the planning and railway sectors were fairly minimal and were not tied to any proposals for major extensions to the core network and did not prevent the development of proposals to close strategic routes. Outside the South East there was more limited strategic planning activity. With weaker historical associations between urban form and railway networks and with so many closures taking place, the scope for developing interrelationships between developing patterns of urban form and the railway system was limited.

The findings with regard to the thematic analysis are summarised in figure 16 and the following summarises the outcomes with regard to the points on the policy agenda developed at the end of chapter two. With regard to railway policy:

1. plans were drawn up to rationalise the network but they went beyond removing duplicate routes and facilities and were based on the goal of minimising the cost to Government of running the railway, and on the basis of a vision of the railway playing a minimal role within the future transport network;
2. plans were drawn up to modernise the core, main line network radiating from London and linking it with other major cities, although only one trunk route was prioritised for electrification; no qualitative leaps were planned such as the introduction of high speed trains or the raising of the vertical loading gauge to facilitate the movement of significantly larger rolling stock; plans were made to upgrade those commuter services in London and other conurbations, and rural services, which were not scheduled for closure;

3. no plans were made with regard to new railways to close strategic gaps in the network, and only one new Underground railway line was planned for London;
4. there was a programme of station enhancement, but many stations were scheduled for closure and there were very few plans for new stations;

With regard to the town planning agenda:

5. planning policy generally was not articulated in ways which identified the implications for the railway network, with the exception of some strategic plans in the South East and even these concentrated only on radial routes to London;
6. planning policy and ideology with regard to the redevelopment process in existing urban areas was dominated by the needs of motor vehicles, with generally negative implications for access to railway stations and rail freight facilities, and the guiding principles for redevelopment were built around the needs of road traffic movement;
7. the policy with regard to greenfield areas was to prevent their development as far as possible, but where development was planned the prime transport consideration was to provide for access by road vehicles: with the exception of most of the new towns, there was no general attempt to ensure accessibility to the railway network;

Despite, or perhaps because of, the dominance of road building in transport policy, there was an identifiable shift by 1968 with development of the social case for the railway and recognition that all the expected growth in road traffic could not be accommodated. Creation of the PAG group showed recognition of the need to reinvigorate strategic planning, which was potentially beneficial with regard to managing the development process in ways to facilitate rail travel. But it was still clear that British planning ideology had little understanding of how to do that.

Figure 16: Summary of thematic analysis of sector policy 1948-68.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology	Public service role of the 1940s replaced in the 1960s by a commercial remit and dominance of the reductionist Treasury view. Development of the political case for the social railway by 1968	Labour's vision of integrated transport did not embrace land use, and Tories were against integration per se. There was political consensus around planning for the road network. Support for strategic planning and recognition of the case for the social railway offered better prospects for the future.	Priorities linked to housing, town centre redevelopment and countryside protection. Transport elements dominated by road lobby. Public sector hegemony replaced by private sector.
Professions and professional ideology	Introverted culture focused on technical disciplines - engineering and operating. New blood came from private sector whose business culture was hostile to the public service mentality and emphasised importance of core businesses.	Very limited interface between the professions: their ideological gaze was away from each other. Main contact restricted to location of new towns and some other major developments. More contact in London and the South East than elsewhere.	Continued dominance of design oriented ideology: convergence with other professions around road planning/urban redevelopment. Minimal planning for access by public transport - Runcorn exceptional.
Governance and management	Railways seen as a nationalised industry to be managed first as a public service but, post-Beeching, as a public corporation. Spatially, policy focused around a core, modernised main line network. Awareness by 1968 that a need for change for local services in the conurbations.	Little awareness, or concern, for most of the period that institutional structures and their internal cultures were inimical to linking the two sectors. There was an intention to change this by 1968, particularly in the major conurbations.	Major focus of activity related to other areas of local government: integration with road planning the dominant transport theme. Re-emergence of regional planning in the 1960s largely focused around land-supply and economic issues, but limited attempt to plan in co-operation with BR in the South East.

CHAPTER FIVE

OUTCOMES: 1948-68

Introduction.

The aim of this chapter is to review the outcomes of the interplay between the institutional structures and policies of the railway and land-use planning sectors, to draw conclusions as to whether these were largely positive or negative with regard to the role and utilisation of the railway network, and to offer some explanations for these outcomes.

The overriding outcome was the huge increase in society's transport activity, passenger and freight, and the overshadowing of all public transport modes and rail freight by the huge growth in car and lorry traffic. Total passenger movement increased from 219 to 389 billion kilometres between 1952¹ - 68, with that by car and light van increasing from 58 to 279 billion kilometres. The proportion of households without a car declined from 86 per cent in 1951 to 51 per cent in 1968. Total passenger movement by rail (BR plus all other networks) declined from 40.4 to 34 billion kilometres between 1948 and 1968 (a 16 per cent decline), having reached a peak of 41 billion kilometres in 1958-59. Bus and coach travel declined from 92 to 64 billion kilometres over the period (a 30 per cent decline) showing that, by comparison, rail was reasonably successful. With regard to freight, the total of goods lifted by all modes increased from 1202 million tonnes in 1952 to 2009 million tonnes in 1968, a 67 per cent increase. The total lifted by rail declined by 27 per cent from 289 to 211 million tonnes. Reflecting the changes in the geography of manufacturing and distribution which became more transport dependent, there was an increase in goods carried by all modes from 88 to 129 billion tonne kilometres, a 47 per cent increase. Goods moved by rail fell from 37 to 23 billion tonne kilometres, a 38 per cent decline, so by both measures, there was a significant absolute decline in rail freight.

The railway network was cut-back by approximately one third, the number of freight depots, marshalling yards and private rail sidings was massively reduced, and the number of passenger stations was more than halved (appendix nine). Extensive parts of rural Britain in Cornwall, Devon, Central Wales, East Anglia, the Pennines, the

¹ DoT statistics for total passenger travel only run from 1952.

Southern Uplands and Highlands of Scotland were removed from the railway map, along with many urban branch lines. Superficially therefore, it would seem that there was limited scope for planning to link developing land-use patterns with the contracting railway network. However there was another side to the outcome, as indicated by the fact that the decline in bus and coach ridership was much steeper than for rail. The main line network received considerable investment: for example the Kent Coast electrification was completed by 1962, that of the WCML between London and Birmingham, Manchester and Liverpool by 1966, and high speed diesel-electric locomotives were introduced on to the ECML. Journey times were cut by up to a third and the WCML electrification produced spectacular returns:

An upsurge of 50 per cent in passenger receipts and 65 per cent in passenger journeys, some of which were recaptured from air (BRB, 1966, 3)

Retained local railway networks were improved with DMUs and EMUs replacing steam services. All this meant that there were plenty of opportunities for planning policy to concentrate activity around modernised railway corridors and nodes.

There were two major dimensions to planning practice in the period. In one the planning system was used proactively to manage major schemes such as new towns, expanded towns and overspill estates: the geography of the railway network was a significant strategic consideration in some of this. In the other dimension, which became dominant, the planning system was largely reactive, responding to pressure from the private sector for the development of green field sites for private housing and major town centre schemes for commercial redevelopment. Planning in this case was typified by the development of green belt policy, a fairly blunt instrument with which to manage decentralisation and, in town centres, the use of planning powers to assemble publicly owned sites and develop master plans in partnership with private developers. Access to the road network was the overriding transport consideration in this, but there were examples of favourable outcomes for rail.

Planned decentralisation.

London's paradigm status as a planning problem was inherited by the whole of the South East region. Between 1951-61 redevelopment of inner areas at lower densities led to population decline in Greater London (the built-up area within about fifteen miles of Charing Cross). On the other hand the outer ring, between fifteen and forty-five miles, increased its population by 964,000 in the same period (Hall, 1971, 19-

20). This growth was strongly, but by no means exclusively, associated with the planned dispersal of population and employment from inner London.

Of the areas designated for London's new towns all, except Basildon², had a station at designation, although even Basildon lay on a radial route to London (see appendix ten). In Harlow a new 'town centre' station³ was opened in 1960, whose poor relationship with the town centre has already been noted. The low priority given to rail in new town planning by both the MHLG and BR was revealed in a contemporary publication:

Train services are not a great problem because, apart from a few commuters, nobody needs them to get to work.....Most towns..... have reserved land for a new station; but getting the new stations built is a long job (Schaffer⁴, 1970, 141).

Clearly, despite rising car ownership and personal mobility, even in 1970 Schaffer's views about the needs of new towns residents for transport were still quite contrary to those of the authors of the 1946 Inglis Report. Outside the South East the association between the railway network and new towns was more patchy: Washington station was closed in 1963 at the same time as its designation, and Corby closed in 1966 (Daniels and Dench, 1980); there was no station on designation at Newton Aycliffe, and Peterlee, Skelmersdale and Glenrothes were not on the railway network at all.

Town expansion under the 1952 Act was a more random process than new town designation as it depended upon reception areas volunteering to enter into agreement with the exporting authority. Appendix eleven shows that, although the towns which entered into agreements with London were all on the network and had a station at the time of making their agreement, three towns in East Anglia, (Braintree and Brocking, Haverhill, and Mildenhall), lost their stations in the 1960s. Bodmin, an unlikely overspill for London perhaps, retained only Bodmin Road. In the provinces two of Wolverhampton's partners and eight of Glasgow's did not have a station at the time of making their agreement. As a result of pre and post-Beeching closures, stations were closed at three of Birmingham's partners, both of Walsall's, three of Wolverhampton's, Burnley lost two local stations but kept its main one, three of Bristol's partners lost their

² referred to at the time as one of the 'notorious examples' of the BRB vetoing new station projects (Allen, 1966, 210)

³ Now a listed building

⁴ Schaffer was a senior civil servant and for seven years was in charge of the New Towns Division of the MHLG.

stations, one of Newcastle's and eleven of Glasgow's. Despite the exhortations of the New Towns Committee, there were no extensions of railways to serve new settlements.

It is important to recall that the aim of planned decentralisation was to reduce demand for travel into London through self-containment. Although the Inglis Committee had cast doubts on the likelihood of this outcome, research (Hall, 1971, 338- 346) showed that the new towns stood out in terms of their relatively low levels of out-commuting. The problem with this apparent success was its relative insignificance: 'Overall, just under 4 per cent of the total housing effort had gone into the planned communities' (Hall, 1971, 358-359). Notwithstanding the decentralisation of employers from London, employment there increased by about 150,000 (Hall, 1971, 23) as a result of service sector growth. Public transport, particularly rail, was important in providing access to the jobs:

...of 1,238,000 people entering central London on an average day in 1962, less than 10 per cent (123,000) used private transport (Hall, 1971, 131).

This increase was accommodated by improvement to commuter services into London which included electrification of routes into Essex. This was initially to Shenfield⁵, then Chingford, Enfield, Hertford and Bishop's Stortford by 1960, and all the way to Southend and Clacton by 1963⁶ (see appendix 5 for details of electrification schemes). The investment in the Bishop's Stortford line included the opening of new stations at Southbury, Turkey Street and Theobalds Grove, a rare event during this period⁷. Another belated completion, in 1947, of a pre-war project were the extensions of London Underground's Central Line: eastwards from Liverpool Street, surfacing at Newbury Park to connect up with the former Great Eastern country branch lines to the growing suburbs of Woodford, Loughton and Hainault⁸; and westwards to West Ruislip (Bruce and Croome, 1996). The route from King's Cross to the new and expanded towns of Letchworth, Welwyn, Stevenage and Hitchin was widened to allow a more frequent service but, although earmarked for electrification in the Modernisation Plan,

⁵ a scheme begun by the LNER but delayed by the outbreak of war in 1939 and completed in 1949.

⁶ this electrification of Eastern Region routes out of Liverpool Street was a product of the Modernisation Plan

⁷ These were in fact re-openings of stations closed in 1919 when services were withdrawn on the Churchbury Loop between Lower Edmonton and Cheshunt owing to competition from street trams.

⁸ As evidence of London Transport's continuing ability to deliver integrated transport, the route surfaced at Stratford to provide cross-platform interchange with BR Essex commuter trains, and three of the new stations - Wanstead, Redbridge and Gants Hill - were on the Eastern Avenue with good bus connections.

this did not take place until the 1970s. The commuter routes to Kent were improved by extensive work at Charing Cross in 1954 to accommodate 10 car commuter trains⁹ (Morgan, 1994) and then, between 1959-61, the Southern Railway electrification was extended by the Kent Coast scheme to Canterbury, Ashford, Ramsgate, Dover and Folkestone (appendix four). These schemes brought dramatic improvements in services with reductions in journey times (28 minutes off the Liverpool Street-Clacton schedule), and more frequent services (those to the Kent Coast were almost doubled).

Despite the strength of the central London office market, decentralisation of offices accelerated and in the four years to the end of 1961, planning permission was given for a greater volume of office development outside central London ie, the City and West End, than within it (Marriott, 1967, 181). The single most notable feature of this was the development of Croydon which was 'the only centre worthy of the name' (Marriott, 1967, 185). Central Croydon grew from more or less zero floorspace to nearly 300 000 square metres (three million square feet) built by 1964. There was a rational pattern behind the spread of decentralised offices and the locational relationship with transport networks was crucial:

Access to transport and to pockets of white collar workers were the two decisive factors.....Ideally, there had to be inter-suburban links to ferry office workers to and fro by public transport, and links of road and underground train with the West End or the City, or both (Marriott, 1967, 180-181).

Whereas Croydon was not on the Underground, its growth as a suburb had long been associated with the excellence of its rail connections to central London. It was therefore an ideal location to draw in rail commuters from its own hinterland and to provide the rapid access to central London necessary for business purposes. However, despite the its prime location on the south London network, the detail development of Croydon was highway oriented. This comprised the archetypal townscape of high rise office blocks built alongside a new dual carriageway, Wellesley Road, which had elevated and underground sections, along with multi-storey car parks and a purpose-built shopping mall, the Whitgift Centre. Although the Council played a leading role in promoting this investment, implemented through the development plan, no special measures were taken to promote access to and from the railway station, which received

⁹ Because of the low vertical loading gauge, extra capacity on the British network could only be achieved by running longer trains which necessitated platform extensions at stations: two experimental, and rather compact, double-deck trains were built by the Southern Region in the 1950s, but were deemed to be unsuccessful. Double deckers were considered again in the 1960s, but the idea did not get off the drawing board (Allen, 1966, 219-21).

no investment either, and the road schemes rendered pedestrian access from the station more difficult.

Another impact of the decentralisation process was that it tended to lead to the replacement of inner suburban journeys by long distance commuting, thereby exacerbating network capacity problems:

...in the present minimally planned environment, commercial migration from London tends to boomerang on BR.....Between 1962 and 1964, for example, season-ticket travellers from Basingstoke¹⁰ to London, 48 miles out, rose by 83 per cent in number, whereas those from the commercially developing suburb of Kingston-on-Thames, 12 miles out, dropped by 13 per cent (Allen¹¹, 1966, 227).

Although in a general sense decentralisation in the South East was good for BR's business, it tended to increase the problem of 'the peak' and made it difficult to reduce overcrowding, despite increases in network capacity. The opportunities to secure mutually beneficial development through the disposal of surplus land were missed too. In 1964 the MHLG requested that the BRB co-operate with the LCC, and then the GLC, in making surplus land¹² available for housing and giving the local authorities first refusal: this became a general requirement under MHLG Circular 57/66. The tensions between BRB and the planning system over the slow progress in securing financial yields from this were made clear when an annual report referred to these arrangements as 'a distinct drawback to the Board' (BRB, 1968, 56).

The limitations of strategic planning.

The limited commitment in the South East to integration between strategic development and the railway network meant that there were no plans for cross-London rail routes of the sort discussed during the War, and orbital routes were closed. Whilst major growth was promoted in locations like Milton Keynes, Northampton and Peterborough, as well as the already well established centres of Oxford, Cambridge and Swindon, railways between them were put forward for closure. A service existed between Oxford and Cambridge, and steam had been replaced by DMUs. En route between the two towns this service offered connections with four major trunk routes: the Great Western at Oxford, the WCML at Bletchley (with easy access to Milton Keynes and Northampton), the Midland main line at Bedford, and the ECML at Sandy (for

¹⁰ Basingstoke experienced rapid growth in the 1960s and 1970s under the Town Development Act

¹¹ Geoffrey Freeman Allen was editor of *Modern Railways* and this book was widely regarded within the industry as a seminal publication.

¹² The 1964 BRB annual report referred to 800 acres of land in Greater London being the subject of discussions (BRB, 1964, 67)

access to Peterborough). With these strategic links and the expected growth at key nodes along the route, there was obvious potential in this line, but Barbara Castle agreed to closure in 1965 and services were withdrawn as of January 1, 1968 (Allen, 1966, 39). The absence of investment in new railways, even in London, meant that Heathrow was not linked to the network, although this had been suggested by Abercrombie in 1944. Two early BTC initiatives, which really were completions of former Southern Railway projects, exemplified the backward looking culture. In 1948 a new terminal for BOAC flying boat services was opened at Southampton followed in 1950 by a new Ocean Terminal for trans-Atlantic liners, and both of these were linked to London by rail services. The flying boat terminal was redundant by 1950 and the Ocean Terminal by 1960, both eclipsed, of course, by the development of Heathrow. However, as evidence that there was not total failure to integrate rail with air transport, in 1958 a new station on the London-Brighton main line was provided at Gatwick which was developed as London's second airport: there had been a long established station at Gatwick for the racecourse, so this was really a well chosen rebuilding exercise by the BTC.

The Ashford-Hastings line is another example of an orbital route which connected two growth areas and, even at this time, Ashford was envisaged as important with regard to Channel Tunnel plans. This route was slated for closure by Beeching, but survived as a result of local opposition (Moody, 1979, 207), although it was one of the few Southern Region routes not electrified and was served by DEMUs. The fact that such gaps were left in the electrified network was indicative of the tight Treasury constraints on investment. Another area earmarked for growth which suffered large scale closures was Bournemouth-Poole: these included lines which linked them with another area of rapid growth, Bath-Bristol. This route was closed in 1966 with a rail journey between the two conurbations subsequently necessitating a circuitous journey via either Dorchester or Southampton with a change of trains en route, always a disincentive to users. The route between Brockenhurst and Poole via Ringwood, and the direct line from Poole to Salisbury had already been closed in 1964, so the opportunity was lost to guide the growth of Bournemouth-Poole along rail axes, as well as to facilitate direct rail access to Bath-Bristol and the intervening Mendips area of outstanding natural beauty (Adley, 1988, 79-103).

One notable exception to the general case of the run down of suburban services in the provinces was the Welsh Valleys lines. In the pre-grouping era five companies had run services to Cardiff and these all passed to the GWR in 1923, and were then handed on with minor changes to British Railways in 1947, so rationalisation was long overdue. The service was recast in 1953 to give regular interval services, and then steam was replaced by DMUs: these improvements seemed to reflect the self-contained nature of the Valleys where the absence of long distance main lines allowed management to be focused around local services. Despite colliery closures and rationalisation post-Beeching (Davies and Clark, 1996, 6), the services survived remarkably well, given the fact that they served a sparsely populated hinterland and linked it with a city of only medium size. In subsequent years, with further rundown of the coalfield, these links with service sector employment in Cardiff were to become more important as will be shown in chapters 7 and 8.

Transport impacts of housing location and design.

With regard to the impacts of planning ideology on the design of residential areas, the outcomes were complex and were the product of three ideological models. The first was in the new towns and town expansion schemes where the garden city tradition lived on, but varying degrees of pedestrian-vehicular segregation were employed to bring the traditional neighbourhood concept into the era of mass car ownership. Although most new towns were located on railway lines and either had a station at designation or were provided with one, or in some cases an additional one, this was about as far as planning around the railway network went. Despite the prior practice of Unwin and official advice, stations were not always accessible, as exemplified by Harlow. Although Runcorn's new town centre was well located with regard to the busway, it was inaccessible from the railway station. A better solution was provided at Redditch, which was also notable for bus-oriented planning, as the new town centre was to be an expansion of the original which had an existing railway station. Redditch was designed by consultants Wilson and Womersley who were well aware of the growing importance of public transport to Government policy in the mid-1960s, noting that BR's proposed closure of rail services to Redditch had been refused (Wilson and Womersley, 1966, 59). They also produced a bus-oriented linear design for Irvine where, again, the new town centre was located at the historic town centre which had a station (Irvine Development Corporation, 1971).

In the second model the large urban local authorities, encouraged by central government (both Labour and Conservative), had their massive redevelopment programmes which were typically inspired by Modernism. However, post-Beeching, local rail services were often withdrawn. As the street tramways were scrapped too, the residents became dependent on bus services. Where new developments were located on the urban fringes this lack of rapid rail connections with the mother city placed the residents at a considerable disadvantage with regard to their access to jobs, services, families and friends¹³.

Increasingly it was the third model which became dominant wherein private, speculative builders developed large estates of detached and semi-detached houses and bungalows, with little direct input from the urban design professions and with minimal planning control. Here the vision was a scaled down version of contemporary American, consumerist suburbia built around car ownership, domestic appliances and relaxation in private gardens. The role of the planning system was largely confined to fixing the location: typically this was either on the edge of a large town or city; or in small towns and villages in the rural hinterland of major cities, out beyond the green belt. In a contemporary study of the Hertfordshire green belt Pahl (1970) showed that the new residents of the expanding villages were more affluent and, being car owners, more mobile, than the original working class residents. Their presence tended to lead to reductions in local services and the planners' vision of the future tended to be through the eyes of car users, leading to a development pattern which depended on use of a car to gain access to necessary services:

Planners and builder-developers may be forgiven for thinking primarily of job opportunities and communications to take the chief earner to work when making decisions in the outer metropolitan region However, it is the chief earner's wife who actually lives in the outer metropolitan region day in and day out, and most of these women are certainly not mobile (Pahl, 1970, 120)¹⁴.

The developers were well aware that the likely purchasers of their houses would be car owners and provision for their needs was an important design consideration: there had to be space to park cars and adequate access to the main road network. For the most part proximity to a railway station was not a factor. Generally, the peripheral

¹³ Research by Wilmott and Young (1957) showed the strength of family and kinship networks in the East End and the relative isolation which could be experienced in overspill developments, particularly by women if they were not working.

¹⁴ This was a far cry from the middle class, country lifestyle portrayed in Noel Coward's 'Brief Encounter' produced in 1945, wherein Celia Johnson used the train for her weekly trips to Milford to change her library books at Boots, have coffee at the Kardomah, and illicit encounters with Trevor Howard.

location maximised the distance between the new housing estates and the nearest station, which was typically in the town centre. As large numbers of smaller railway stations were closed, the tendency was for an increasing average distance between the location of new housing and the nearest station, although there is no available data for this period.

Whatever ideology influenced the location and layout of housing, the one common factor which came to affect the residents' lives was car ownership. In a thorough contemporary evaluation of planning policy there was a clear conclusion as to how road building and land-use policy had combined to benefit car users:

Increasing car ownership's most significant effect has thus been substantially to increase the proportion of the population able to make cross-country journeys between places too small or too distant from each other to support a reasonably convenient public transport system..... The type of person who has benefited most from the mobility explosion has been the car owner living in a small town or rural area. And containment policies have operated to place a substantial part of the population growth, during the 1950s and 1960s, in just such areas - thus encouraging the use of the car (Hall, 1973, 418).

The generally poor location of housing developments with regard to the railway system, and the decline in railway services in most city regions, meant that rail was not an option even for these longer radial journeys which historically had been a characteristic feature of the railway's role.

Rail served housing: the exceptions.

Amidst this generally poor integration between housing developments and the railway system, there were some positive outcomes. The line from Birmingham to Sutton Coldfield was built in 1862 to serve this growing suburb and was extended northwards to Litchfield in 1884. In 1948 BR inherited a frequent commuter service between Sutton and Birmingham, but this had changed little and was archaic by comparison with the pre-war Southern Electric model. In 1951 the population of Sutton Coldfield stood at 47,000, more than double the 1931 figure, and commuters were a significant part of the population. Local BR managers were aware of the need to improve what was the busiest commuter line into Birmingham and an hourly, regular interval, steam-hauled service was introduced in 1954 carrying about 2,390 passengers per day (Boynton, 1993, 77-78). In 1956 the service went over to DMUs and the frequency was increased. Soon after an exceptional event took place:

The "Railway Magazine" reported in November (1957):-

“A temporary station, Butlers Lane, which has been experimentally installed by the LMR to meet the needs of a housing estate under development, was opened on September 30th

The opening of a new station was an earth shattering event in the 1950s. There were new stations built in that decade, but most appeared on declining rural lines as last ditch attempts to attract extra traffic. They have all now vanished. Butlers Lane is the second oldest station built since the formation of British Railways in 1948 which remains today (Boynton, 1993, 83).

However, despite this early success and the continued growth of population in Birmingham's outer suburbs facilitated by the development plan process, even this railway service went into decline. This was because of increasingly tight investment constraints which led to lowered maintenance standards, reductions in service and no electrification. In the meantime the commuters bought cars.

The Sutton Coldfield branch line was unusual: outside Greater London any improvements to local railway services usually only came about as a result of main line investment which allowed simultaneous improvement of local services on the same route. The best examples were those associated with the WCML modernisation which facilitated electrification of local services between Rugby-Coventry-Birmingham-Wolverhampton-Stafford, Birmingham-Walsall, Manchester-Crewe/Stoke, and Crewe-Liverpool Lime Street. A notable exception was Clydeside, resulting from the Abercrombie and Inglis reports, and the lobbying by Glasgow city council. The Helensburgh-Queen Street Low Level-Airdrie cross city service was electrified in 1960: new stations were opened at Garscadden and Hyndland. This was followed by electrification from Glasgow Central to Cathcart, Neilston, Kirkhill and Hamilton in 1962, and to Paisley, Greenock and Gourock/Wemyss Bay in 1967¹⁵. Tables 6 and 7 show that the introduction of DEMUs and EMUs stimulated ridership, but that the superior service given by electric trains resulted in the biggest increases, the 'sparks effect' which the Southern had discovered forty years previously. To illustrate the limited horizons of rail investment even in Glasgow, the Rutherglen-Dumbarton cross-city line utilising the tunnel under the CBD via Central Low Level, was closed in 1964 and,

¹⁵ This latter route was the most heavily populated of all and arguably should have been electrified soonest: Allen (1966, 144) considered that the reason for the delay was a deal struck between BR and Glasgow Corporation to protect Corporation bus services from competition, a nice example of how public ownership was no guarantee of providing the best service for the public. This was a difficult time for the Corporation Transport Department as the street tramway network was closed between 1959-62 and replaced by bus services, which were themselves experiencing competition from rising car ownership.

despite Abercrombie and Inglis, neither the route to East Kilbride nor Cumbernauld was electrified, but at least they avoided closure.

Table 6: Impact of service improvements on ridership on Birmingham suburban services 1966-69.

Route	Time period	Increase in ridership
Birmingham - Walsall*	1966-69	+51%
Stafford-Wolverhampton-Birmingham-Coventry-Rugby	1966-69	+112%
Birmingham-Lichfield (DMU)	1966-69	+22%
Birmingham-Kidderminster (DMU)	1966-69	+18%

* electrified services unless indicated otherwise eg. (DMU).

Table 7: Impact of service improvements on ridership on Glasgow suburban services 1960-73 (1960 base line=100)

	Glasgow North (Airdrie-Helensburgh)	Neilston Branch	Gourock/Wemyss Bay	Lanarkshire Circle (DMU)
1960	100	100	100	100
1961	electrified	electrified		
1966			Electrified	
1973	358	285	217	220

Source: both tables Greater Glasgow Transportation Study, 1974

It is disappointing to note that, despite the Corporation's support for electrification, the location of peripheral housing estates took little note of the geography of the network (Smith and Wannop, 1985, 155). Despite electrification, there was no extension of the network to better serve the estates, this was impossible given the Government's stance and the overall mindset of the BTC/BRB. As in Birmingham, the city development plan was restricted to zoning existing railway land as 'operational railway land'. On the other hand the 29 CDA's promoted for housing renewal, were also utilised to assemble land for motorway construction and extensive land allocations were included in the development plan for this (Corporation of the City of Glasgow, 1960).

City centre redevelopment.

The product of road-oriented redevelopment for town centres was disastrous for the environment and for access to the railway network. Birmingham was typical, with its multi-level Bull Ring development opened in 1963, followed by the inner ring road around the whole city centre (Cherry, 1994) which served to create a barrier and had a blighting effect. In Newcastle and Bristol, new dual carriageway roads were associated

with large scale office developments with barren, first floor pedestrian decks (Aldous, 1975).

It has been demonstrated in chapter two that planning for rail was not a significant component in British planning ideology. The lack of appreciation of Victorian station design was reflected in the fact that the grand plans produced in the 1940s often included proposals for station redevelopment: even those of the quality of York were earmarked for this. Whether or not such plans came to fruition depended upon BR's investment plans and local property markets, but local planning authorities were usually enthusiastic when the opportunity arose. The most notorious episode was the rebuilding of Euston as part of the WCML electrification, which triggered demolition of Hardwick's Doric Arch and the Grand Hall. Euston was London's first terminus so the Arch dated from the dawn of the railway age and its demolition served as a spark to ignite the popular, conservationist backlash against the developers and the Modernist ideology of the architects and planners. Euston was also a case where the BRB proposed an airspace office development as part of the rebuilding but:

Almost incredibly, the London County Council refused British Rail permission to develop office accommodation over the rebuilt Euston Station as it would increase street congestion....., while granting permission for office blocks along Euston Road remote from any station (White and Senior, 1983, 114).

Space was left between the new station and Euston Road to take advantage of any change in planning policy but, despite the Labour Government's pro-public transport stance, strategic policy worked against this as it was stymied by the restrictions on office development introduced in 1963 on an informal basis, and then formally under the Control of Office Employment Act of 1965. These difficulties with the planning system were referred to in the BRB annual reports with a growing sense of frustration:

Although belatedly it became generally accepted that the most suitable places for major office developments in London are over the main-line stations, efforts to progress worthwhile schemes of this kind are frustrated by Government restrictions (BRB, 1968, 56)¹⁶.

With regard to the location and general ambience of stations, the changes in city centres tended to not only promote the use of cars, but also to actively work against the use of the railway network. It will be recalled from chapter two that one of the historical weaknesses of the railway system was the peripheral location of stations with regard to

¹⁶ This went on to refer explicitly to the illogicality of granting permission for the Euston Centre referred to above whilst refusing air space development over the redeveloped Euston station.

city centres. There was no strategy to invest in realignments, by tunnelling for example, and some existing tunnels were closed. What happened instead was that 'concentricity' led to construction of inner ring roads which, because of the peripheral location of stations, often lay between them and the commercial core. This reduced the accessibility of stations by introducing another barrier and, typically, crossing the road necessitated use of pedestrian subways or over-bridges which came to be regarded as amongst the most unattractive features of city centres. This re-arranging of the road network and its relationship with stations was facilitated by statutory town maps and CDA plans. Examples included Bristol, Hull, Gloucester, Sheffield and Plymouth.

In some cases, far from increasing the rail penetration of town centres, lines were cut back with new stations being built in more peripheral locations. Sometimes the driving force behind such rationalisation was the BRB, in pursuit of cost reduction. In other cases it was the local council, acting through its planning and/or highways committee, as the land was required for redevelopment, sometimes for road building, with the changes being incorporated into statutory plans. Closures of well located stations included Blackpool Central and Nottingham Victoria: the latter, built in a huge cutting and more conveniently located than the retained Midland Station, was completely demolished and a shopping mall, the Victoria Centre, was developed on the site. Despite the good location and access via tunnels under the city centre, the new development was granted planning permission in 1965 with a design that precluded the later restoration of a rail service. The acquiescence of the BRB and the planning authority in this failure to retain an option for rail reinstatement was typical of the era.

An important by-product of the changing position of the railways in the transport market was the closure of freight facilities on the periphery of city centres. In chapter two it was noted that these had been provided on a massive scale, typically with duplication. During the 1960s the wagonload and general merchandise traffic collapsed and there were widespread closures: 'The result was a sudden and massive increase in redundant land' (Biddle, 1990, 203). Although close to city centres, often this was not close enough to make it attractive for commercial development. This meant that the most financially rewarding use was to lay the areas out as a 'temporary' car parks for the growing numbers of commuters who either could not, or would not, use the railway. Thus redundant railway infrastructure was used to facilitate competition from the car. More generally the BRB recognised that disposal of redundant land could provide a

significant income to offset its losses: in 1965, Railway Sites was wound up and the Estate Department given a more specific brief to dispose of land rather than seek its development.

City centre redevelopment: the exceptions.

There were situations where integrated planning produced a more positive outcome: in London the main stem of the Victoria line between Walthamstow and Victoria opened in 1969, giving access to King's Cross/St Pancras and Euston, as well as the prime retail area of Oxford Circus. Arguably the only development where anything like the sort of high quality, multi-level scheme envisaged by Buchanan came to fruition (although not completed until the early 1970s) was the Barbican, which was also readily accessible by Underground on the Corbusian model. But even this had a downside: 'London Wall - a motorway dividing the city. A completely anti-pedestrian environment despite the upper level walkway' (Ward, 1986, 43). Despite the planning difficulties referred to previously, by 1968 significant commercial developments were secured at Holborn Viaduct and Waterloo, with a large airspace development at Wembley Central in the suburbs.

Outside London positive outcomes were most likely where complete modernisation of railway infrastructure was taking place, such as on the Coventry-Birmingham-Wolverhampton axis. Lord (1991) reported that in 1963, as a result of post-Beeching streamlining, the Western and London Midland Regions were merged and the new organisation took a more focused approach to securing development opportunities. New Street had always been unusual because of its central location and this provided a good opportunity to carry out the sort of development which should have been more widespread: the building of large retail and office developments at major stations (Marriot, 1967). Henry Johnson, the Chairman and General Manager of the London Midland Region, said that the intention at New Street was to emulate recent developments at Cologne and Munich to create 'an attractive social centre in addition to a modern environment for railway business' (Modern Railways, 1964)¹⁷.

The tragedy for New Street was the architectural form which this took: the tracks were 'decked' over by a 7.5 acre slab and the inspiring ambience of the glazed train shed was replaced by a gloomy, subterranean world at platform level. Commercial buildings designed in the 'Brutalist' style, were erected above, with little recognition in

¹⁷ The development was linked to the adjoining Bull Ring scheme which contained a bus and coach station.

the interior layout that the shopping centre was the prime means of gaining access to the station below. The City's development plan had nothing to say about this project other than to allocate the whole site as 'operational railway land'. The 'modernisation' of all stations during the 1960s was dominated by this no frills approach of the 'Modernists' which influenced the BRB Design Panel¹⁸ in the same way that it influenced local planning authorities¹⁹. Because of the decayed state of many old stations, redevelopment in this style was welcomed at the time:

Elegant new show pieces of modern architecture with model passenger facilities were put up at Tamworth and on a much grander scale at Coventry. Between Crewe and the Manchester-Liverpool terminals a good many local stations had their old buildings replaced by neat pre-fabricated structures of modern outline, to complete the image of a thoroughly up-to-date service when the electric multiple-units began to run (Allen, 1966, 139-40).

In 1965 the Design Panel created the 'double arrow' totem to signpost the location of stations and this piece of functionalism has certainly stood the test of time. Overall however, despite the fact that the Victorians had understood the commercial benefits to be gained from grand stations, and the urban design principles underpinning station location and design had been developed by Unwin, they were ignored in the early post-war decades. The statutory planning system played its part in this, albeit a limited one because, in many cases, utilising its rights as a statutory undertaker and/or gaining powers by parliamentary Act, BR could rebuild stations without the need to obtain formal planning permission. But even where planning permission was required, owing to the involvement of commercial development with station rebuilding, planning authorities were ill-equipped ideologically to secure a better outcome. Oxford was an extreme example where BR wished to rebuild the station utilising funds generated by development of adjoining vacant railway lands: the city council refused permission as the vacant lands were required for a road scheme (Modern Railways, 1969)²⁰. The overall result was that passenger access to the network tended to become more difficult.

Industrial development.

¹⁸ In what was an example of the positive impact of the post-Beeching market-oriented approach, this design work involved the creation of a women's panel to advise on the design of passenger rolling stock; however there is no evidence that this extended to consultation about issues such as station design and access (Allen, 1966, 55)

¹⁹ Upsurge in demand for school and other community buildings led to local authorities developing the CLASP system of prefabricated construction: the 1966 BRB annual report noted that this system of providing very utilitarian structures had provided new stations at Fleet and Sunbury-on-Thames.

²⁰ Improvements at Oxford were finally in place by 1999.

In the early post-war decades, in just the same way that the old Victorian housing areas needed to be redeveloped, so the industrial areas needed attention too. However, this was a lengthy process. Although through the 1945 Distribution of Industry Act central government did get involved in industrial development, steering industries to new towns or the depressed regions, by and large the State, at either central or local level, played a more passive role in the redevelopment of industrial areas compared with housing areas or city centres. During the early BTC period when the road haulage industry was being nationalised, the 1951 annual report showed that the BTC was mindful of the need to locate new road haulage depots in locations which would promote road/rail co-ordination, but such initiatives were stillborn. Owing to improvements in heavy goods vehicle technology and the development of the road network, more and more industrialists changed over to road transport: sidings were closed and internal railway networks fell into disuse.

From the 1930s, the sorts of buildings which modern industry required were large, single storey structures with a much larger footprint than the multi-storey structures of old. Post-war planning authorities were aware that more land needed to be allocated for industry but, despite the experience of the 1930s trading estates, there was little pressure from industrialists to include access to the railway network as a locational requirement in development plans. So, as in the housing areas and city centres, authorities focused on the need to improve road access and a rail link was not seen as a standard locational requirement with regard to access for freight or the workforce.

The major land development activity by BR, the construction of the marshalling yards, did not require formal planning permission as they were built using parliamentary powers. They had a huge land take requiring sites up to three miles long and half a mile wide: the biggest was Carlisle Kingmoor which covered 2.75 square miles of greenfield land. The overall construction programme lasted over ten years as shown in table 8, and the last, Tinsley, was not opened until 1965. But this programme did not bring planning authorities and the railway industry together in jointly utilising the planning process. Liaison was only consultative and the industry worked to its own agenda. There was no development of the mutual understanding or information sharing which was necessary to develop a pro-rail culture within planning authorities, or an understanding of how land-use could be manipulated to serve the railway within the railway industry. The collapse

of the wagon load traffic which inspired construction of the yards was so severe that, by late 1965, closure of Ripple Lane was in hand, seven years after it opened, and a number of major projects were quietly aborted at the planning stage.

Table 8: The Modernisation Plan marshalling yards.

Yard	Year opened	Yard	Year opened
Bescot (Walsall)	1966a	Ripple Lane (London)	1958
Crewe	1961b	Severn Tunnel	1960/62
Dringhouses (York)	1962	Tees (Thornaby)	a 1963
Healey Mills (Wakefield)	1963	Temple Mills (London)	1958a
Kingmoor (Carlisle)	1963	Thornton (Fife)	1956
Margam (Port Talbot)	1960	Tinsley (Sheffield)	1965
Millerhill (Edinburgh)	1963	Tyne (Gateshead)	1963
Perth	1962		

a reconstruction of existing yard(s)

b Basford Hall yard at Crewe opened in 1901 but was electrified as part of the WCML project

Pre-existing major yards which received no significant investment under the Modernisation Plan are not listed: examples included Whitemoor, Feltham, Toton, Wath, Willesden, Cricklewood and Mossend.

Source: Rhodes, 1989.

By the mid-1960s structural economic change was leading to closure of rail connected industrial complexes too: the railway industry itself was not immune as exemplified by closure of private plants such as Beyer Peacock's in Manchester and North British in Glasgow. Electrification of the station at Singers in Glasgow was illustrative of the way in which the whole of the old railway was expensively electrified, rather than proactive policy with regard to use of the modernised railway for industrial workers: factory and station were closed in 1969.

The statutory planning process had little influence on the development of strategic transport policy and, as has been shown, by 1963 the die was cast in favour of road transport. Planners were pressured by their highway engineering colleagues²¹ to prevent roads in industrial areas from becoming blocked with parked vehicles and causing difficulties for lorry access, by ensuring adequate on-site parking. Local planning authorities thereby required planning applications for the new industrial estates to include land for ample off-street car and lorry parking. The lower density development which this produced, wholly dependent on road access, was a further

²¹ Typically, until the mid-1960s, this was the same department and often the planning was done by engineers or surveyors in any case, owing to the small number of qualified town planners, and, as has been shown, City Engineers were in the forefront of the replanning of the cities in the early post-war period.

element of the incremental process of adapting the built environment to facilitate access by cars and lorries.

Post-Beeching, the BRB seemed content to let much of its freight traffic fall away anyway, as it focused on trainload haulage of bulk products centred on a relatively small number of major industrial complexes such as quarries, collieries, power stations, steel works, oil refineries and ports. The character of contemporary rail freight was epitomised by the introduction of semi-automated 'merry-go-round' coal trains, linking new or modernised collieries with new coal-fired power stations developed by the Central Electricity Generating Board, such as those along the Trent and Aire Valleys²². One of the major locational constraints was the need to place power stations at points where railways ran close to rivers which were used as a source of cooling water (Allen, 1966; Fiennes, 1967; White, 1979). This facilitated retention of the coal traffic which continued to be the core of the freight business and it was typical of the era that this involved three nationalised industries and did not require formal planning consent. BR did develop rail links into private sector oil refineries though, largely developed since 1945 in estuarine locations such as Fawley, Milford Haven, Thameshaven, Stanlow, Immingham and Grangemouth. Between 1963 and 1968 rail increased its haulage of heavy petroleum products from 4.8m to 15.0m tonnes, using the Beeching approach of high bulk wagons and block trains (White and Senior, 1983, 96).

As the focus of industrial production moved towards light industry and consumer products, the rail freight business found it increasingly difficult to carry goods at competitive prices in the quantities generated, from origins and to destinations which, increasingly, were not rail connected. The liner train concept, branded as Freightliner, was a bold and initially successful attempt to compete and a network of 50 terminals nationwide was planned. The potential was recognised by some planners:

In the early new towns much stress was placed on the need for rail communication but, although access was provided to rail sidings, little use is made of them at present. Circumstances may change in the future, as the rail service to industry is improved by liner trains and other means (Schaffer, 1970, 25).

As a result of Labour's reinvigoration of regional economic policy in the 1960s, several large industrial projects were implemented where rail played a role. These included the development by Ford of the Halewood plant on Merseyside and the British Leyland development at Bathgate where rail was used to move components and

²² This was a massive programme involving transport of coal to over a dozen new power stations: although most were close to the coal fields some, such as Didcot, involved lengthy hauls (Modern Railways, 1964).

finished vehicles. However this work to reduce the costs of the automotive industry was something of a mixed blessing with regard to the future prospects for the rail passenger business.

Conclusions

The major issues for management of the post-war railway system were rationalisation and modernisation. But the introverted culture of the industry, and the failure to link it institutionally with external bodies which were more deeply involved in planning for change, meant that the industry found it difficult to develop a vision for its role in a rapidly changing society. Instead, a start was made on rebuilding the whole of the inherited system as though it would continue to be central to society's needs. When things rapidly began to go wrong, changes in transport politics produced an abrupt, politically directed U-turn, and an attempt to reduce the industry down to a profitable, modernised core with minimal call on the Exchequer. The public service paradigm was replaced by minimising cost to the Treasury. Although contraction was painful, the overall view within the industry about Beeching was positive:

His outstanding achievements are to have jolted a hidebound industry out of morbid introspection into an aggressive confrontation of its competitors, to have trimmed it down to ideal fighting weight, and to have bludgeoned the public conscience into awareness of the crucial issues facing public transport in a motor age, even if the public has not yet had the courage to tackle all of them (Allen, 1966, viii).

However, despite the retrenchment and concentration of investment in the core business, BR remained in deficit with little prospect of breaking even: profitability was a goal which turned out to be a chimera.

At the local level it was obvious that, owing to their inherent advantages over the rail mode, growing use of the car and lorry would have profound implications for urban planning. It does not follow, however, that: provision for road traffic should have been such an overriding concern; that the railway network should have been pruned back as far as it was; or that patterns of development should have been encouraged which were so obviously at odds with use and development of the railway network. The case of Runcorn new town shows that there was an understanding amongst some planners of how development could be manipulated to favour public transport, albeit a busway. Similarly, the experiences in places as disparate as the Valleys, Birmingham and Glasgow shows that improvement of local rail services was perfectly feasible outside the South East. Also there were cases of railway managers who fought against branch line

closures, even in rural areas, arguing, counter to Beeching, that both operating *and* track costs could be reduced. Supportive town and *country* planning frameworks could have been linked to the modernised main lines and low cost rural operations, but the institutional arrangements and planning ideology were not conducive to such co-operation. The failure to secure more major development around main line stations characterises the relationship: the positive outcomes were notable because they were exceptional.

The findings with regard to the thematic analysis are summarised in figure 17 and the following summarises the outcomes with regard to the points on the policy agenda developed at the end of chapter two. With regard to railway system:

1. rationalisation went well beyond removing duplicated routes with the goal of cutting back to a commercially viable core network, rather than with an eye to maximising the network's future scope and utility;
2. services and fixed infrastructure on the main line network radiating from London were modernised, although only one trunk route was electrified; outside greater London those commuter and rural services which were not withdrawn were modernised by the introduction of some EMUs but mainly DMUs although, where travellers had a choice, the quality was unlikely to persuade them to prioritise the train over the car; those rail freight services which were retained, were significantly improved but the marshalling yard programme was not a success;
3. no significant sections of new railway were built and in fact some cross CBD tunnels or well located stations were closed, and only one new Underground railway line was built in London;
4. many stations were rebuilt, occasionally as part of a larger commercial developments, but hundreds were closed and there were very few new stations;

With regard to the town planning agenda:

5. planning policy produced patterns of development which were generally poorly related to the railway network, with the exception of some strategic developments such as the new towns and some major industrial complexes, the most significant of

Figure 17: Summary of thematic analysis of outcomes 1948-68.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology	Public service paradigm led to start of rebuilding of most of the historic railway. Cost of this and the rise of the road lobby led to a U-turn towards the Treasury led approach and un-development of a third of the network.	No political champion for rail-planning integration and little evidence of the two systems working in harmony. Planning policy had no effect on Beeching closures. Change in the offing at the end of the period.	The political priorities never included integration between land-use and the railway network: examples of this were exceptional. Muted response from planning system to rail closures.
Professions and professional ideology	Dominance of the technical professions produced backward looking modernisation, followed by fatalism about the Beeching closures. The infusion of private sector businessmen produced greater awareness of market segmentation, but their vision was constrained.	There was minimal contact between professionals in the two sectors and no development of a culture of planning for rail, as developed around road planning.	The goal of self-containment was readily abandoned in the face of growing car ownership, and planners were pulled along with the road oriented ideology of the engineers and architects.
Governance and management	The complex public service monolith of the early period was replaced by a streamlined, action oriented Board on the private sector model. This was used though to secure rapid contraction of the industry and least cost modernisation.	The two systems were managed within different parts of the public sector realm, with little or no political or professional pressure to alter that. Activity in each sector took little note of the other. Firm proposals for change in the major conurbations were in place by the end of the period.	The development corporations secured positive locational outcomes for the new towns, and the non-statutory strategic plans for the South East embraced rail planning, on a limited basis. Elsewhere planning was largely focused around providing for road traffic.

- which were the power stations which were permitted development;
6. the redevelopment process in existing urban areas generally served to undermine access to railway stations, and the location, layout and density of development generally took little note of station location;
 7. with the exception of most of the new towns, the development of greenfield areas generally produced settlements which were not focused around rail corridors, and the location, layout and density of development generally took little note of station location, even in the new towns.

Politically, by the end of the period, the road lobby was dominant, characterised by the 'Motorway Box' plan for London. However, there was rising concern over the growing impact of urban road traffic and the continuing decline of public transport and these were so great as to provoke action: the 'do nothing' alternative looked too unpalatable. But, as explained in the previous chapter, despite the development of a new policy thrust by Barbara Castle, Labour found it difficult to halt the momentum of the closure programme and some duplicate main lines, as opposed to branch lines, were closed as shown in figure 18.

Figure 18: Railway closures under Labour 1966-69 (date of closure in brackets)

the former Somerset and Dorset line between Bath and Bournemouth via Templecombe (1966);
the former Great Central main line north of Aylesbury to Sheffield (1966-69)²³;
the former Manchester-Derby Midland Railway main line through the Peak District between Matlock and Chinley (1968);
the former London and South Western Railway Exeter-Plymouth main line between Meldon Quarry (Okehampton) and Bere Alston (1968).

But on the other hand, the future looked hopeful with a new deal for public transport in the major provincial conurbations to be brought about by the 1968 Transport Act, and a greater emphasis on strategic planning which it was hoped would result from

²³ Having been built 50 years after all the other main lines to London, the Great Central was the best engineered with a generous vertical loading gauge, having been conceived as part of Watkin's Liverpool-Paris vision: despite the Channel Tunnel being a live issue in the 1960s, these attributes were not sufficient to prevent closure. Re-opening of the line as a dedicated Channel Tunnel freight route is currently being pursued by a private company, Central Railway, although the trackbed has not been protected by the statutory planning system other than on a piecemeal basis.

the 1968 Town and Country Planning Act, all to be set within a modernised local government structure. It was clear that the railway industry had a much better understanding of the need for liaison with the planning system:

Co-operation between state, local authorities and public transport to plan population and commercial resettlement around transport routes that need more use economically and can practically absorb it is a *sine qua non* for the resolution of coming problems (Allen, 1966, 226).

What would be critical with regard to future outcomes would be the goals which would be set for the new arrangements with regard to the role of the railways and their relationship to land development, and the adequacy of the resources which would be brought to bear in their attainment. Would these continue to be minimal and largely focused on main lines, or was passage of the 1968 Transport Act symptomatic of a sea change in attitudes and action towards urban public transport and land-use planning?

PART TWO

Conclusions.

Chapter three has shown that, although the railway and planning sectors were both State activities, they took place within quite separate realms within the State structure and the institutional linkages between them were poor. There was change over the period driven, on the one hand, by an ideological shift towards a more commercially managed railway and, on the other, by a recognition that overcoming problems of personal mobility and urban road congestion called for new transport planning bodies in the conurbations. Potentially, the latter could work more effectively at the inter-sectoral interface. There was change in the planning system too with, by the mid-1960s, renewed emphasis on strategic planning, with changes in local government structure in the offing to facilitate this. Given the fact that the strategic dimension to the inter-sectoral interface was, arguably, the most important, these changes were potentially positive. However the very different nature of the drivers behind these various trends presaged difficulties for the future.

Chapter four showed that, when measured against the seven analytical criteria, the development of policy for the relationship between the sectors was inadequate and, in some cases, the reverse of what was required. Although railway nationalisation took place because of a political goal of integrating transport systems in the public interest, this vision did not extend to the adoption of the sorts of prescriptive land-use planning policies which would have been necessary to mould urban form around the network. The political and ideological priorities for planning were housing, urban renewal and countryside protection. Subsequently, the combination of the impacts of the poorly conceived Modernisation Plan and the rise of the road lobby produced the Beeching rationalisation which was based on very narrowly prescribed goals. For example, whereas the strategy did address the issue of duplication of routes and facilities, this was not done from a perspective which perceived a growing role for the railway network as part of a broader transport strategy. Nor did the vision for the core network embrace the issue of improving rail penetration of CBDs by, for example, tunnelling. This meant that planning ideology, which from the outset was poorly developed with regard to the railway network, was even less likely to develop in ways which would reinforce the utility of the much reduced network which the Beeching strategy had as its goal.

Chapter five showed that this was indeed the outcome and that the major transport product of socio-economic change over the period was the massive increase in road transport, with the road network becoming the dominant transport

factor influencing, or transforming, patterns of urban form. However, the limited evidence of positive outcomes, such as new town location and airspace development at stations in London or on trunk routes to London, reinforced the value of considering the three spatial levels at which the sectors interacted. It also allowed some tentative conclusions to be drawn about the underlying nature of the relationship at each level to form the bases of the hypotheses to be tested in the Manchester case study, after further development in part three. This was done by considering the following specific issues:

the impacts of national policy on the broad geographical interrelationships between the railway network and patterns of urban form;
the particular issue of rail access to regional CBDs and the extent to which planning concentrated activity generators in rail accessible locations;
and local railway-land use planning interaction.

The interim hypotheses for each level derived from the analysis in part two are:

at the national level, the focus for route modernisation was typically trunk routes to London, and local services were much more likely to be improved significantly if they were on such routes. These factors did influence planning policy and outcomes in a very general way with regard to matters such as new town location and the location of commercial development at or close to certain stations, as these tended to be on trunk routes serving London;

at the regional level, the gap in railway planning and management with regard to local services in conurbations outside London was identified and the PTA/PTE structure was intended to close it and reverse the rundown of those networks. Land-use planning outcomes had shown that the planning system was effective in controlling patterns of urban decentralisation and in promoting city centre redevelopment, but this had been largely focused on producing developments based on road access;

at the local level, planning and urban design had failed to take advantage of the potential offered by national policy outcomes, as exemplified by the detail of the relationship between stations and land development in the new towns, and urban design was dominated by planning for road traffic.

With regard to the explanatory themes, the dominant characteristic in part two was the remarkable convergence of political, professional, managerial and

governmental ideologies around facilitating the growth of motorised road transport. Even in the heyday of the railways there was no comparable convergence. By comparison with the road transport sector, the railways were politically and ideologically marginalised between 1948-68. Although the resurgence in 1968 of support for strategic planning and public transport was encouraging, it was clear, just as it was in 1947, that much deeper political and ideological change would be necessary to alter the direction of land-use and transport policy and practice if the opportunities presented by the changes of 1968 were to be realised.

PART THREE

Introduction.

Part three of this thesis is concerned with the review and analysis of the relationship between the railway and planning sectors in the 1969-94 period and comprises chapters six, seven and eight. As in part two these deal with, in turn: institutional arrangements, policy, and outcomes with regard to the geographical and operational characteristics of the railway network and their relationship with patterns of urban form.

Conclusions are drawn at the end of chapter six about the degree to which the institutional relationships facilitated the development of positive relationships between the sectors. In chapters seven and eight conclusions are drawn around the seven analytical criteria at the end of each chapter. The three explanatory themes are used to account for actions and changes as they occur in the dialogue, and their impacts are also summarised at the end of each chapter.

Further observations will be made at the end of part three about the relationships between the sectors at the three spatial levels, and the threads will be drawn together, along with the material from the end of part two, to form the hypotheses to be tested in the case study.

INSTITUTIONAL RELATIONSHIPS : 1969-94

Introduction.

By 1968, concern over the social and environmental impacts of the growth of car traffic and the decline of public transport led to a refinement and reassertion of the policies of the 1940s which, in the following decade, cascaded through the railway and planning sectors and produced a new set of spatial outcomes. But at the end of the 1970s, apart from some very notable achievements in a few of the major conurbations, the vision of integrated land-use and transportation planning allied to successful development of modern public transport systems, was still a long way from being realised. In 1968 it was possible to be optimistic about the prospects for railway-land use integration, but in 1979 the prospects became markedly pessimistic. Margaret Thatcher's 'New Right' government set its face against the post-war consensus and sought to re-affirm the primacy of market forces and roll back the frontiers of the State. This bitter economic medicine was intended to shake out inefficiency and encourage managements to break union power so as to raise productivity and profitability. It was sweetened politically with a brand of populism not previously seen in British politics which, for transport, meant the assertion of the right of the motorist to go where he or she chose, when he or she chose. Margaret Thatcher made a point of not travelling by train and she drew attention to the benefits of 'the great car economy'.

This generally bode ill for strategic planning, for publicly owned public transport, and for a nationalised monolith like BR. However, it will be shown that surprisingly, despite Thatcherism, the development of institutional arrangements for management of BR and for strategic land-use planning, produced the most supportive structure of the whole post-war period.

Creation of the Passenger Transport Authorities and Executives.

The 1968 Transport Act restructured BR's finances in the face of continuing deficits and attempted to put the industry on a secure footing. The creation of the PTA/PTE structure in the major conurbations was crucial in developing the interface between town planning and local railway networks. The model for this had a long pedigree going back to the 1905 Royal Commission on London Traffic and the Pick/Ashfield era at the LPTB had demonstrated what could be achieved. The PTAs comprised elected councillors and became responsible for policy making; the PTEs

were their officer level counterpart responsible for implementation. The PTEs were given powers under the Act (section 20) to finance the socially necessary services which BR could not run commercially. They were also given powers (section 56) to invest in public transport infrastructure, which could include railway rolling stock and fixed infrastructure: 75 per cent of the cost would come from Central Government. In addition, section 39 of the Act gave the Minister powers to pay BR grant for other unremunerative services outside the PTE areas, which is where the lion's share was; for example the Southern Region's commuter services which were treated as a single 'block'. Freight services were expected to be profitable without subsidy.

The 1968 Act also substantially changed the pattern of ownership of the bus industry. Various publicly owned coach and bus services outside the major conurbations were vested in a new public undertaking, the National Bus Company (NBC). These services were to be operated in competition with BR's InterCity services. In areas where PTEs were created, municipal bus companies were wound up and their fleets vested in the PTEs. This meant that, for the first time outside London, there was a body in the major conurbations with a focus on local rail services which could organise local bus services to feed into rail hubs. In 1969 the first four PTA/PTEs were established in the West Midlands, Merseyside, South East Lancashire North East Cheshire (SELNEC), and Tyneside. These were followed by Greater Glasgow in 1973, and South and West Yorkshire in 1974.

The structure of BR.

In line with the developing corporate culture within BR, the 1968 Act abolished the statutory regional boards and the BRB produced its first 'Corporate Plan' in 1968. The development of a more outward looking planning culture with participation in the 'conurbation studies' was seen as very beneficial:

By these means, it became possible to see more clearly the significant contribution that the Board's services can make to the passenger transport needs of urban communities in the decades to come (BRB, 1969, 19).

The 1968 Act also required the BRB to report back within a year with a replacement scheme of organisation. There had been concern in the 1960s about Government interference with railway management for political purposes¹, ie. deferring increases in fares and charges, and that the Board was too concerned with running the railway rather than with developing a vision for its future and promoting it externally (Bonavia,

¹ There were particularly scathing remarks in the 1967 annual report (BRB, 1967, 6) which welcomed the recognition by Government of the need to create statutory mechanisms for the support of socially necessary services which, it was hoped, would allow the Board greater freedom of action with regard to the commercial railway.

1971). Any change in the former was unlikely and outside BRB's control, but they lost no time in appointing McKinsey and Company to draw up a management plan.

This was entitled 'Organising for the 1970s' and was adopted by Government in amended form in 1969 (BRB, 1969). The main principles were a clearly defined management structure and a systematic planning and control process based on the setting of objectives. The Board was to take on a non-executive role, with day-to-day management of the railway ('staff' as well as 'line' responsibilities) being handled by a Chief Executive, with the Chairman acting as principal spokesman and head of liaison with the Minister and outside bodies. The implications for reinforcing the role of the railway within society as a whole were positive and signalled a further move away from the former introverted culture. The report also proposed replacement of the six operating regions by eight 'territories'; Bonavia (1985) referred to this as an example of the disease to which BR became increasingly prone - continuous structural change as a response to crisis resulting from being given conflicting and unachievable goals by politicians. BR embarked on this change but it quickly ran into the sands of union opposition and was abandoned after three years; the regional structure remained intact, although non-statutory and without the prior degree of devolved decision making.

A new structure for rail freight.

The 1968 Act had specific implications for institutional arrangements concerning freight: quantity regulation of the road haulage industry was abandoned and replaced by quality control, which only regulated the safety standards of goods vehicles and their operators. The Act set up the National Freight Corporation (NFC) which comprised the rump of the nationalised road haulage industry (British Road Services), the former BR sundries business, National Carriers, and Freightliner with its road haulage fleet. The principle underlying this was that the NFC would be responsible for rail traffic where its origin was road collection, whereas BR would retain control of freight traffic which originated from rail-connected sources. This was a determined effort to try and create an organisation which was competitive in the market for general merchandise and parcels traffic. However, placing rail based services in the hands of a road transport organisation, rather than encouraging BR to develop intermodal expertise, was seen by BRB as disadvantageous to the long term interests of the rail freight business.

Creation of the Property Board.

One very significant change which came out of the McKinsey report was the creation of the British Rail Property Board with the following remit:

to control all property matters for the whole of the Railway Board's undertakings, with particular regard to the commercial development of its property, including the air space over stations (BRB, 1969,52).

The Property Board assumed responsibility for the sale or management of non-operational property and maximisation of revenue from operational property. The need to handle the large amounts of property which were becoming redundant and the need for BR to reduce its deficits, were the rationale for this renewed attempt at creating an effective property operation. These factors also meant that BR had a very specific need to engage with local planning authorities which, if influenced by the right sort of policies, had the potential to stimulate ridership by locating major activity generators at, or near to, stations. That the significance of this new era of management of the railway estate was not lost on the BRB was illustrated in 1974 when Robert Lawrence, former general manager of the London Midland Region and an operator and not a property manager, became chairman of the Property Board and remained so until his premature death in 1984. Lawrence's experience helped him prise the maximum volume of property from the operating departments. Also in 1974 the property regions were increased from five to seven:

this put the regional estate surveyors into smaller administrative areas that gave closer contact with local business and municipal communities (Biddle, 1990, 207).

Local government re-organisation: the English metropolitan counties, the Scottish regions and the GLC.

In the local government arena, underpinning the deliberations of the Redcliffe Maud and Wheatley Commissions was an assumption:

that something loosely called the city region - that is, the city or conurbation plus its sphere of influence - would be the right basis for local government reform (Hall, 1989, 176).

This concept sat comfortably with the PTA/PTE structure, but the commissioners found difficulties in applying the concept because of tensions between the design of administratively efficient institutional structures and the public's politico-geographical consciousness. The former concern drove the English commissioners towards the unitary concept, whereas their Scottish colleagues opted for a two tier structure throughout. Senior was alone amongst the English commissioners in his support for a comprehensive two tier structure, but the rest of his colleagues were sufficiently persuaded by his arguments to support a two tier structure for the conurbations, with a unitary structure elsewhere. In the event it was left to Edward Heath's Conservative Government, elected in 1970, to make the final decision. But the important point to note is that the need for strategic planning at a broad geographical scale, as recommended by the PAG group, was recognised, in

parallel to the case for planning public transport at this level and subsidising it in the wider public interest. The phoenix of integrated land-use and public transport planning, at the level of the city region, was rising out of the ashes of the experiences of the early post-war decades. Further evidence of ideological shift after a decade or more of growing environmental awareness, was the creation of the Department of the Environment in 1970 out of the former MHLG, and its absorption of the Ministry of Transport.

The first significant step in the direction of combining responsibility for strategic land-use and transport planning in a single, directly elected body, came in 1970 when the GLC took over London Transport (Garbutt, 1985) under the 1969 Transport (London) Act. However, it was significant that the area administered by the GLC, at 600 square miles (roughly the area contained within the metropolitan green belt), was considerably smaller than the 2,000 square miles previously administered by the LPTB. Given the extending influence of London and the fact that main line commuter services remained with BR, this was to become a significant disadvantage for strategic planning².

Heath's 1972 Local Government Act produced a different structure for England from that envisaged by Redcliffe Maud: a two-tier system of counties and districts was created throughout England and Wales. In terms of town planning the upper tier of county councils was to be responsible for producing structure plans, whereas the lower tier district authorities would produce most of the local plans. In the six major English conurbations new geographical entities, metropolitan counties, were created which became responsible for strategic land-use planning and highway planning. As in London, they took over responsibility for public transport by absorbing the PTA/PTE structure too: unlike the GLC though, the 1968 Act gave them powers to develop and finance local BR services.

The absorption by the PTEs of municipal bus fleets saw the ending of the system of Joint Operating Committees set up in the 1930s. This involvement by BR in local bus services, was replaced by the PTEs having a much more interventionist role in the planning and financing of local rail services. The bringing together of responsibility for all local transport planning under the umbrella of the metropolitan counties was a significant move towards a more integrated structure. But an important facet of it was the fact that the PTEs were legally separate organisations

² The former LT Country Bus and Coach Department which operated services out towards the periphery of the old London Transport area, was absorbed by the NBC, which undermined the potential for integration with rail services.

from their parent county councils, and often physically separate too, each being 'a body corporate with a Common Seal' (Hellewell, 1996, 14). This meant that there was a significant division of labour between the PTEs who were responsible for public transport, and the county highways departments who continued to have responsibility for road planning. Therefore the institutional structure continued to provide a quite separate locus for road-oriented planning. County planning departments were usually in the same building as highways, and there was likely to be very regular contact between staff in the two departments³ concerning matters ranging from consultations over planning applications to the drawing up of comprehensive redevelopment plans. It was clear that the structure was not as supportive of public transport oriented land-use planning as it might have looked at first glance. Also trunk road planning continued to be the responsibility of the MoT, (albeit that this had notionally been amalgamated with the DoE), and proposals were developed in a quite separate planning framework and had to be automatically incorporated into statutory land-use plans. This was further illustration of the limitations of the new structure.

The inability of the GLC (London Transport) to directly influence London commuter rail services was an issue picked up by the 1977 transport White Paper (DoT, 1977, 30). However the Government felt that commuter services were too closely integrated with the rest of the railway network to be extracted and handed over to the GLC. But the GLC and the DoT set up a London Rail Advisory Committee to look into the improved co-ordination of rail services. In common with the GLC, and despite the city region concept, the boundaries of the new metropolitan counties were drawn relatively tightly and, by and large, they were contained *within* green belt boundaries. Given what was said in the previous chapter about the development of transport behaviour patterns which involved regular journeys across green belts, these tight boundaries created significant institutional barriers to strategic planning. This problem did not occur to the same degree in Scotland where a two tier structure, with an upper tier of elected regional bodies, was created: Strathclyde region took over the PTA/PTE and as such administered an area which embraced the whole of Greater Glasgow and beyond. However the actual PTE area comprised only about an eighth of the region although, to confuse matters, the PTE acted as the region's agent on public transport matters throughout the region.

³ A significant development in the 1960s was the creation of separate planning departments, whereas previously planning had often been a function of surveyor's departments.

The new structure was in place by April 1974. It was striking that it reflected past trends of urbanisation in that PTAs were created in the older, industrial conurbations: other more complex urban systems such as the Leicester-Derby-Nottingham triangle, or emergent conurbations such as Portsmouth-Southampton, Bournemouth-Poole, or Bristol-Bath were not included. Even such an historic, industrially based system as Cardiff and the Valleys was excluded, despite its retention of a good local passenger network which was favoured by the area's physical geography⁴.

Although creation of the metropolitan counties and the PTA/PTE structure was positive with regard to the development of strategic land-use and transportation policy, it was more problematical with regard to local planning. Lower tier district councils were much more concerned with traditional planning issues such as the provision of housing land and urban renewal, along with developing new expertise in housing improvement area planning, derelict land reclamation and conservation. They were generally remote from the policy interface with BR and this meant that the development of a rail oriented culture at local planning level was unlikely. It was also significant that the districts had their own borough surveyor's departments which acted as agents on local highways matters for the county councils. This reinforced the highway oriented linkages between land-use planning and road-oriented transport planning, in contrast to the relatively remote linkages with rail oriented planning by the PTEs.

The 'shire' counties and the railway network.

As will be shown in the following chapter, the mood of political optimism which marked the late 1960s changed markedly in the mid-1970s in the face of severe economic difficulties. The economy was plagued by high inflation resulting from global and domestic sources and this led to political turmoil (Sked and Cook, 1993, pp 253-291) as Heath's Government tried to cope and the unions fought back to protect real earnings and jobs. A statutory prices and incomes policy was developed which led to confrontation with the unions, and problems with oil supplies associated with the OPEC crisis were exacerbated by coal shortages caused by domestic industrial unrest. Heath introduced the three day week in the autumn of 1973, followed by other energy saving initiatives including a blanket 50 mph speed limit on the roads. In February 1974 he called a general election on the 'who rules the country?' issue: the National Union of Miners responded by calling a national strike. Labour was returned to Government without an overall majority, although this was

⁴ Its case was recognised in the 1977 Transport White Paper, but no action was taken.

secured in a further general election in October 1974, but the economic problems persisted.

As a reflection of this more pessimistic mood, the MoT was separated from the DoE again in 1976 which arguably served to make trunk road planning even more remote from local transport planning. However, things were not altogether bleak: with the PTEs having been operating for a number of years there was a growing awareness that their administrative areas were relatively constrained and many provincial rail services served cities outside them as well as extensive rural hinterlands. The importance of the public transport work of 'shire' county councils was recognised by the 1978 Transport Act which required them to produce a five year public transport plan. This meant that, although county councils had been involved in bidding for finance from central government for road construction since the Ministry was created, it was only in 1978 that mechanisms were fully in place to empower them to plan and bid for funds for public transport developments. But, given the then current state of public finances, this was unlikely to amount to much investment in the railways in the short term.

Thatcherism and the undermining of local planning authorities.

Heath's new institutional structures were only fully in place by 1974, by which time Labour was back in power. They were relatively short-lived as, following further economic difficulties leading to conflict with the unions and the 'Winter of Discontent' (Healey, 1990; Sked and Cook, 1993), Margaret Thatcher's 'New Right' Conservative government was elected in 1979 with a large majority in the House of Commons. The new Government was committed to a break with the post-war consensus which it viewed as characterised by the mixed economy, interventionism and, since 1974, corporatism. They were wedded to the view that it was the private sector which was the source of wealth and it had to be freed from the dead hand of State regulation. Local authorities were viewed with suspicion as, at best, a necessary evil and, at worst, profligate and subversive of the national interest. With regard to town planning and public transport therefore, the 1980s and early 1990s were marked by a more or less continuous process of unwinding most of the institutional relationships which had been painstakingly built up over the previous three decades.

Town planning and urban regeneration came under the Thatcherite spotlight from the outset (Ambrose, 1986; Thornley, 1992). The 1980 Local Government Planning and Land Act abolished the regional economic planning councils which survived from the 1960s and introduced 'Urban Development Areas'

(UDAs). Here development control was to be taken away from local councils and, along with land ownership, investment and other interventionist powers, was vested in Urban Development Corporations (UDCs), central government appointed bodies on the new town model (O'Toole, 1996). The Government acted quickly and created UDCs in the redundant dockland areas of London and Merseyside in 1981.

Another feature of the Local Government Planning and Land Act was the power it gave to Government for the creation of Enterprise Zones (EZs) in areas needing economic regeneration. These were mushrooming all over the country as a result of severe economic recession especially, but not exclusively, in the midlands and the north. Although the creation of an EZ brought a bundle of advantages to an investor, such as tax incentives and freedom from payment of local property taxes, they also created a relaxed planning regime where specified developments could take place without the need for formal planning consent. This was a further undermining of the power of local planning authorities to control patterns of land use: eleven EZs were created in 1981 with a further fourteen in 1983-84.

BR and sectorisation.

The Government's view of the importance of markets reflected the diagnosis of BR's ills made by Bob Reid, who became Chairman in 1982. His view was that the corporate railway had lost touch with its customers and he re-organised to create five 'business sectors', as a move towards becoming a more 'business-led' organisation. At this time there is little doubt that the primary aim was cost cutting ie. not running trains for which there was no identified market. The passenger sectors were InterCity, London and South East (L&SE), and Provincial; Freight and Parcels (including Royal Mail and newspapers) were the other two. Bonavia (1985, 39) identified three main methods of devolution in large organisations; by function, by territory, and by product. In the early years of nationalisation devolution was focused around function and territory; post-Beeching it focused around territory and product; creation of the sectors reinforced this trend towards product.

In order to avoid the sort of staff backlash which the post-McKinsey attempt at re-organisation had provoked, an evolutionary approach was adopted whereby the sector structure was laid over the regional structure. The regions were still responsible for running trains and maintaining the permanent way whilst the Sectors were their 'customers'. This undoubtedly led to confusion: the Sector Directors drove the marketing function and were responsible for financial results which were produced via various internal accounting mechanisms, the first time this responsibility had been devolved below board level since the creation of BR in 1962.

But the artificiality of the financial results came in for criticism and the whole sector idea was seen by some as a product of 'the desire to re-organise, to be seen to be doing *something*' (Bonavia, 1985, 38). But the creation of one organisation to oversee London's commuter services was something that critics had long argued for. In the provinces the creation of the Provincial sector, widely perceived as the Cinderella of the passenger businesses, potentially brought land-use planning and the railway closer together by creating a focus that had a vested interest in medium and short distance journeys in urban and rural areas.

Abolition of the metropolitan counties.

Given their commitment to market forces and rolling back the State, the Government had little enthusiasm for the sort of strategic intervention represented by structure planning and other activities of the upper tier authorities, particularly those in the conurbations. The latter were all Labour controlled and were a source of effective political opposition characterised by the GLC regime led by Ken Livingstone, once Labour returned to power in 1981. Transport, particularly London Transport fares, became the focus for intense conflict (Garbutt, 1985, pp 67-76). Fundamental changes were mooted in 1983 and the GLC and the metropolitan counties were abolished in 1986 by the 1985 Local Government Act: this retrenchment did not extend to the 'shire' counties which were less directly associated with Labour. Abolition of the GLC and the metropolitan counties meant that responsibility for local transport planning fell to the highways departments of the remaining lower tier district councils which had previously been acting as agents for the counties. This served to further erode the scope for integration between land-use planning in the districts and PTE driven railway planning, as any linkages usually had to be developed through, or at least in conjunction with, the highways department whose priority was the local road network.

Public transport and market forces.

1986 was a seminal year as it marked the end of the attempt, begun in 1968, to integrate strategic land-use planning with the development of publicly owned public transport. From the start it was clear that the latter would be a target for Thatcherism: it was ideologically unacceptable and was viewed as being, in practice, associated with trade unions and cosy relationships with Labour controlled public bodies. This threat was reinforced when one of Thatcherism's leading ideologues, Nicholas Ridley, became Secretary of State for Transport in 1983. However, with regard to the railways there was a strong political folk memory of opposition to the Beeching closures and an awareness of the political significance to the Government

of the South East commuter electorate. The Government therefore took a more gradualist approach to 'reform' of BR than it did with regard to its relaxation of local authority planning control or policy towards the provincial bus industry. This involved increased pressure to make BR more market oriented and to reduce its dependence on public subsidy, rather than statutory restructuring or privatisation. These pressures did indeed produce significant policy shifts within BR with regard to the ways in which the organisation was structured and run and, in terms of international comparisons, made it into a notably efficient performer amongst state owned railways. Ironically their ideological commitment to market forces made the Conservatives rather good managers of publicly owned enterprises, although this was usually to make them 'leaner and fitter' in readiness for privatisation.

The first statutory step with regard to public transport was the 1980 Transport Act which deregulated the inter-city coach industry. As even under the NBC coaches had competed with InterCity (on price), the implications of this were not particularly profound for BR, but were a shift away from transport integration nevertheless. The perceived success of this encouraged the Government to extend deregulation to all stage bus services. After trials in Hereford and Worcester and Devon which the Government saw as successful (DoT, 1985) the 1985 Transport Act deregulated stage bus services and forced the various publicly owned undertakings to create 'arms length' operating companies which could run as straight commercial entities. Those services operated by the NBC were earmarked for privatisation at this stage. In April 1986 the metropolitan counties and the GLC were abolished and in October stage bus services were deregulated: Thatcherism was clearly making its mark in unravelling the work of 1968-72, although there was an element of caution in the strategy as bus deregulation did not extend to London.

Implications for the railways.

London Transport had already been replaced in 1984 by a new body, London Regional Transport, which was under the direct control of the Secretary of State for Transport. To some extent, this did improve matters for London's railways as both BR and London Underground services were then under the direct influence of the Secretary of State and he had signalled his intention to achieve better co-ordination and interchange between the two railways. With regard to fares, this was illustrated by introduction of the Capitalcard in 1985 which allowed travel by British Rail, Underground or bus on a zonal basis: this was a backhanded complement to the policies of Ken Livingstone.

As far as the railway network outside London was concerned, the impact of bus deregulation fell particularly in the urban areas where buses would be free to run in competition with local rail services, and the operation of regulated, feeder services ended. However, the PTA/PTE structure survived abolition of the metropolitan counties⁵, the reason for this seems to be pragmatism, certainly not ideological commitment to integrated public transport. Much of the bus industry remained in PTE ownership and there was a need for continued administration of the funding of discounted travel for OAPs, children and other groups, along with the operation of a system for funding non-commercially viable bus services (tendered services).

Outside the conurbations the upper tier of 'shire' counties remained⁶. Since 1978 they had been preparing public transport plans and, although they did not have a statutory duty to invest in local rail services, a significant number of them did so with significant results as will be shown. A positive element of the 1985 Transport Act for the railways was Section 63, which empowered the shires to contribute revenue support to local rail services. However, the internal structure of the DoT continued to have a heavy roads bias: Bonavia (1985, 113) reported that of sixteen under-secretaries two dealt with railways and seven with roads, and of forty-five assistant secretaries four dealt with railways and thirteen with roads. The DoT was poorly structured to respond to pressure from local government for investment in rail.

Further erosion of the planning system.

The erosion of the powers and influence of local planning authorities continued relentlessly in the second half of the 1980s and, during the tenure of Nicholas Ridley as Secretary of State for the Environment (1986-88), reached its zenith. The 1986 Housing and Town Planning Act introduced Simplified Planning Zones (SPZs) which would enjoy the relaxed planning regimes of the EZs without the financial benefits. The first SPZ was declared in Derby in 1988 by which time there were twenty-three EZs. Also by that time UDCs had been created in Sheffield, the Black Country, Trafford Park, Tyne and Wear (Newcastle and Sunderland), Teeside and Cardiff, with 'mini' UDCs in Central Manchester, Leeds and Bristol. Taken together, the creation of EZs and particularly the UDAs, was a severe erosion of the influence of local planning authorities on urban regeneration which had arguably become the most significant problem facing the major urban areas. In 1988 the influence of local authorities was further eroded by the replacement of grant regimes which funnelled public money through them to developers in non-UDA areas, by City

⁵ The elected members coming in future from the remaining district tier of local government

⁶ The balance between unitary and two tier arrangements now being the obverse of what Redcliff Maud had recommended.

Grant, which flowed directly from the DoE. By 1989 the involvement of local authorities in regeneration was so marginal that the Government was criticised by its own watchdog, the Audit Commission (1989): 'The totality of government effort in the inner cities is less than the sum of its parts'. It is ironic that the concept of the development corporation which, when used under the 1946 New Towns Act was seen as an indication of positive attitudes towards planning, should have come to be seen in the late 1980s as indicative of the contemporary Government's hostility to it. The rider to this was the winding up of the new towns programme and the disposal of their assets to the private sector.

In the late 1980s, abolition of the GLC and the metropolitan counties left a vacuum at the strategic level and the Government had no intention of filling it: 'The fact is this: in 1988 we start with a blank hole where strategic local government used to be' (Hall, 1989, 170). However it was recognised that London, at any rate, was so large and complex that some sort of co-ordination between boroughs was required: to fill this gap, the 1985 Local Government Act created the statutory London Planning Advisory Committee (LPAC). In the provincial conurbations there was to be no such statutory body and it was left to the metropolitan districts to co-ordinate their planning activities to the extent that they saw fit. This meant that a range of post-abolition structures developed, ranging from very informal arrangements with minimal contact between authorities, to more formal structures with joint bodies at elected member and various officer levels.

These changes had implications for plan making as the bodies which had produced structure plans were no longer extant. As a result a new kind of plan, the unitary development plan (UDP), was introduced which would be produced by all the remaining lower tier authorities in London and the former metropolitan counties. UDPs would have a strategic element (part one), and would also comprise a borough wide local plan (part two). Given the absence of an upper tier strategic body to fix the context for these activities, the DoE issued Regional Planning Guidance for London and each of the former metropolitan counties, but the content was brief and bland. Collectively these changes severely curtailed the potential for planning authorities to co-ordinate patterns of development with the railway network as this is dependent upon a strategic and prescriptive approach. Although the UDCs were very interventionist, the following chapter will show that, for the most part, they were not ideologically given to planning around public transport networks.

The resurgence of strategic planning.

In the property boom of the second half of the 1980s the initiative for new house construction lay almost totally with the private sector. As will be seen later, this led to conflict between developers and residents in the hinterlands of the city regions, especially in the South East. As this conflict was typically through the planning appeals system, it inevitably drew in the Secretary of State as arbiter, particularly where major developments were proposed such as new settlements. Nicholas Ridley was ideologically biased towards the developers who were responding to market forces, but the opponents were frequently staunch Tories, so the conflicts were politically unfortunate for Ridley to say the least. His effigy was frequently burnt at protest rallies and his ratings reached a nadir when he was famously caught out objecting to a new development in his own 'back yard' in the Cotswolds.

These tensions resulted in his replacement in 1989 by Chris Patten who developed a significant change in the Government's ideological stance towards planning, and their view of the relationship between land-use and demand for transport. Patten also saw the need to rejuvenate the regional planning process and reinforce the role of bodies such as Serplan. This was partly, perhaps, because he recognised the intellectual case for this. But also Patten saw that the voluntary involvement of local planning authorities in developing regional planning guidance meant that they would develop ownership of the policies which would reduce the risk of the Secretary of State getting mired in the sort of conflicts which had beset his predecessor.

In light of such conflicts debate developed about the lack of a statutory layer of government capable of strategic planning. With regard to greater London, Hall commented that:

....underneath the surface, the problems that brought the GLC into being have not gone away. On the contrary they are endemic, and if anything they have been intensified in the intervening thirty years.....We can be sure before long - perhaps by 1995, almost certainly by the year 2000 - the spectre of London government will once again rear its head (1989, 174).

He was unduly pessimistic as debate had commenced by the early 1990s and support for some sort of strategic body to co-ordinate land development with transport infrastructure was coming from unexpected quarters - the property industry. Suggestions for a new body ranged from re-establishing a democratically elected body with an executive figurehead comparable to the mayor of Paris, to a Government appointed commission which would include transport and commercial interests as well as local government representatives (Falk, 1990). However, moving

the clock back in this way proved too much for the Conservatives and the existing structures remained unchanged, although reinvigorated.

The balkanisation of local government came under increasing criticism in the early 1990s, particularly with regard to urban policy. The result was an attempt by Government to pull together various disparate elements into more coherent policy bundles, such as the Single Regeneration Budget, and the regional organisation of Central Government departments was restructured as part of this initiative. This produced regional Government Offices (GOs) in 1994 which provided a more focused approach to liaison with regional planning conferences and BR sector managers.

Reinforcing the sectors.

It was the development boom of the late-1980s which caused the resurgence of interest in strategic planning and the boom also led to increased railway ridership and stimulated bulk freight traffic, particularly that associated with the construction industry. This generally positive economic climate reinforced the drive towards following through the sectorisation process which had started in the early 1980s. Economic growth was focused in the South East and its railway network had always been the most important part of the national network: this is why London and South East had been created as a separate sector. In 1986 this process moved a stage further and all London's commuter services, which had previously been operated as separate entities by the four regions with their financial results pooled for presentational purposes, were amalgamated into Network South East (NSE). Chris Green was brought in from the Scottish Region as general manager. This created a single champion for London's commuter services: NSE was a sizeable business in its own right with a turnover in excess of £1 billion pa and focused management of this augured well for service development (Green, 1989). The prior creation of LPAC and encouragement of Serplan meant that, surprisingly, given the Government's ideological character, a very positive framework had been constructed for strategic integration between land-use planning and the development of rail services in London and the South East.

Outside London a similar improvement in institutional relationships developed. The increasing role of the 'shire' counties in rail investment has already been mentioned. The creation of the Provincial sector had produced a champion for what were third priority services, coming after InterCity and London and South East. These were a mixed bunch and included: long distance routes between major cities, such as Liverpool-Newcastle; local services in the PTE areas and around major

cities; and rural services. Since 1982 the Provincial sector had developed five regional sub-sectors; Scotland, North West, North East, Central, and South Wales and West, each with its own management based in Glasgow, Manchester, York, Birmingham and Swindon respectively. In addition, the Government's strict financial control over BR, and BR's growing experience with extracting money from local authorities, meant that there was growing within the industry a culture of developing and nurturing links with local government. Taken together, this meant that the institutional structures and cultures for integration between local railway planning and local authority transport and land-use planning were stronger than at any time since 1947.

The railway side of this relationship was further strengthened when, in 1990, the Provincial sector became Regional Railways and, like NSE, took over ownership of trains and management of operating staff from the Regions. As the Government's support grew for regional planning in other regions on the Serplan model, opportunities developed for closer working on policy development between the Provincial sub-sectors, regional planning conferences, and representatives from the GOs.

In 1988 sectorisation was also applied to the freight business, the bulk of which post-Beeching was based on trainload traffic. The overall branding was Trainload and the sectors were Coal, Metals, Construction and Petroleum: Freightliner was combined with the remaining UK and international⁷ wagonload businesses to form the Railfreight Distribution sector, with the Royal Mail and parcels businesses comprising the final sector.

The success of sectorisation in allowing the various railway businesses to develop their markets, encouraged BR to reinforce their role further. This process started internally in 1989 and by mid-1990 proposals had been accepted by the Board for implementation over the next few years. As in the early 1980s there was to be progressive change on an evolutionary basis with a target completion date of 1993. The strategy was labelled 'Organising for Quality' (Ford, 1991) and the aim was to make the Sectors into vertically integrated railway businesses having total ownership of infrastructure and rolling stock and to abolish the Regions. Each Sector was to be further broken down into 'profit centres' based on routes, a structure which closely resembled the Line Management approach which the Eastern region had developed in the 1950s (Bonavia, 1971, 88-89). The BR Board would be responsible for setting targets, special projects such as the Channel Tunnel would be

⁷ This was quite a substantial business based on train ferries serving Harwich and Dover

progressed by dedicated task forces, and a central services facility would remain to oversee technical work.

Just as the creation of the Sectors had been potentially beneficial to the relationship with the local planning system, their reinforcement was likely to further improve the scope for fruitful liaison. For example, the Sectors would now have 'ownership' of stations and would have a direct interest in securing passenger generating activities in and around them. NSE was quick off the mark in beginning the process of implementation of Organising for Quality and publicised (Gough, 1991, 6) its development of a tight/loose management philosophy. This involved having a tightly-knit central management team with responsibility for strategic planning and external liaison with bodies such as Serplan and London Transport, but would also delegate operational matters and local liaison down to each of the nine operating divisions based on specific rail corridors. This structure and management philosophy was very supportive of the development of relationships with strategic and local planning bodies and augured well for the future if the other two passenger sectors were to develop along similar lines.

Railway privatisation.

In the general election of 1992 the Conservatives, under John Major's leadership, were re-elected, somewhat surprisingly in the opinion of most commentators. Eager to show that the Government had lost none of the radical zeal of the Thatcher period, his ebullient Secretary of State for Transport, John MacGregor, lost no time and in July of that year published a White Paper setting out the Government's intention to privatise the railways (DoT, 1992). For those who thought that BR's biggest problems stemmed from intervention and manipulation by politicians for their own ends, this was the final proof of their thesis: the outcome was that just as BR completed the Organising for Quality initiative in April 1993 and placed all the infrastructure in the ownership of the Sectors, the Board was instructed to take it all away from them and place it with a new track authority, Railtrack, by April 1994. As a backhanded complement to how close the Sector structure was focused around various rail markets, the structure of the passenger rail franchises which were eventually offered to the private sector closely followed the sub-sector structure of InterCity, NSE and Regional Railways (Harris and Godward, 1997).

Conclusions.

This chapter has shown that between 1968-94 there were substantial changes in the institutional structures for the railway network and the planning

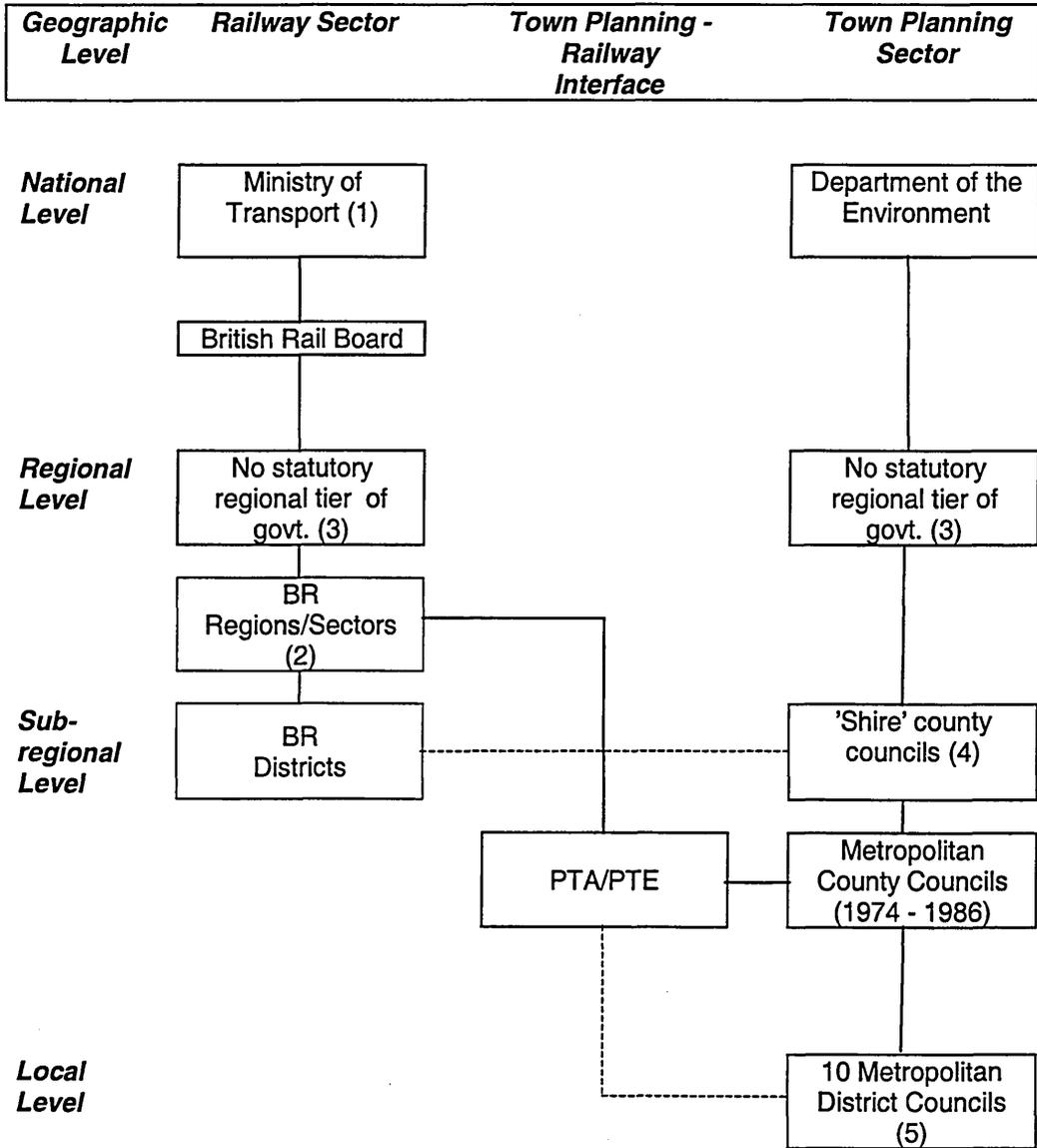
system: figure 19 summarises the institutional structure where it was strongest in the provincial conurbations, and figure 20 summaries the thematic analysis.

The period began with bringing London Transport under the control of the GLC, the creation of the PTA/PTE structure, and the re-organisation of local government. In the major provincial conurbations, this created a structure which, although it had its weaknesses, made it easier to relate railway development to strategic land-use planning. Outside the conurbations the 'shire' counties were also eventually empowered to become financially involved in the development of railway services. However, this was a period when BR was characterised by a centralised or 'corporatist' approach to its management, although service delivery was still dominated by engineers and operators in the Regions. Outside the PTE areas therefore, the overall interface with local government was poor.

Although the election of the Conservatives in 1979 led, initially, to a blunting and erosion of the institutional structures for land-use planning, and looked threatening to the prospects for BR, this was not how things eventually worked out. The Bob Reid era produced very significant changes in the internal management structure of BR which sought to place it much closer to its markets and change its culture towards that of a private sector service provider, dependent on maximising sales. By the mid-1980s this structure began to engage very favourably with local authorities who became recognised and valued as both customer and partner. By the late 1980s the sectors were engaging with the revived structure for regional land-use planning in the Patten era. Overall this produced what was arguably the most favourable institutional structure for the relationship between the railway and land-use planning sectors of the whole post-war era.

Once the Government signalled its intention to restructure BR in readiness for privatisation, then the organisation entered a period where it returned to focus almost entirely on internal matters: relationships with local government quickly began to break down.

Figure 19: Institutional relationships between the railway and planning sectors in England (outside London) 1969-94.



1. Between 1970 and 1976 the Ministry of Transport was part of the Department of the Environment
2. The responsibility for management of the infrastructure remained with the Regions until the Organising for Quality initiative in 1992 when infrastructure was divided between the business sectors. From 1982 onwards the sectors provided an additional interface at the regional level.
3. Regional Offices of the MoT (later DoT) and the DoE were re-opened in the 1970s. Serplan was reinvigorated in the 1980s, and similar regional planning conferences were created in the other English regions.
4. The 'shires' began to develop relationships with the sectors in the early 1980s and these strengthened up to 1994.
5. The metropolitan district councils were responsible for local planning from 1974-86, and for local and strategic planning after 1986. PTAs were made up of councillors from these authorities post-1986.

Figure 20: Summary of thematic analysis of institutional structures 1969-94.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology	Initially a centralised corporate structure, but expected to develop a close relationship with PTA/PTEs through the regional structure. Hostility by Conservatives post-1979 produced a segmented, market oriented organisation and culture, which sought linkages with the whole of local government.	Initially close in London and the PTA/PTE areas. Undermined by Conservatives in the early 1980s, but a strong resurgence in the late 1980s early 1990s which particularly embraced the shires and regional bodies, as well as the PTA/PTEs.	Initially seen as a local public service, but with a local and <i>strategic</i> role. Hostile stance by Conservatives post-1979 saw powers transferred to other organisations or undermined. Strategic role re-emphasised in the 1990s within a culture which increasingly favoured 'partnership'.
Professions and professional ideology	Initially continuance of traditional introverted and hierarchical structures. Post-1979 development of market oriented culture which sought partnership with property interests and local government.	Initially few points of contact between professions in the two sectors, other than in London and the PTA/PTE areas. By late 1980s much more contact across a broad front, including shires and non-metropolitan districts. Presence of BR Property Board provided opportunities for project based co-operation.	Planning continued to be embedded in same structures which were concerned with road building, and continued to look towards these primarily. Links were developed with the PTA/PTEs in the metro counties. Ideological crisis for planning in early 1980s which emphasised links with property market, but by late 1980s planners developing links with rail sector across a broad front.
Governance and management	Seen as a centralised, production oriented corporate body in the 1970s. Sectorisation produced a complex, devolved structure focused on market segments, leading to valuing of links with local government.	Throughout the 1970s there was an aspiration towards linking the planning and railway sectors, especially in London and the PTA/PTE areas. Despite changes the linkages remained in London in the 1980s but were weakened elsewhere, only to be re-invigorated across a broad front in the late 1980s/early 1990s.	Local government re-organisation produced a two tier structure focused on strategic/local planning. PTA/PTEs provided a linking mechanism. This was undermined in the 1980s, although the stimulus to regional planning in the 1990s created bodies which were able to re-assert the linkages in a climate where partnerships were valued.

Introduction.

This chapter will show that major investment plans for main line and local railway services were developed in the 1970s, but that the response by the planning system was limited: the main thrust was towards restricting the location of major trip generators to town and city centres which, by and large, were well served by rail. However, because of the lengthy statutory planning process, by the time these policies were formally adopted Mrs Thatcher's Government was in power and had no intention of constraining the property market in this way.

There followed a difficult period for the railway and planning sectors as the Government embraced the market and its locational pull towards the road network. But from 1990, owing to the growth of popular concern about the environmental impacts of road-oriented decentralisation, there began a progressive policy U-turn. Unexpectedly, this produced the most thoroughly articulated, pro-rail land-use planning policies of the whole post-war era, and a railway management which understood the importance of this and sought to build on it.

Owing to the break in the policy thread this chapter is split into two parts, broadly before and after 1979. It begins by reviewing policy at the national level to 1979, then drops down to look at London and a sample of provincial conurbations, and finally considers the rest of the country. This pattern is repeated for the 1980s, before returning to review national policy changes in the early 1990s.

Main line railways to 1979.

Government concerns over the high cost of WCML electrification were finally overcome in 1970 with the decision to complete the work through to Glasgow. BR's thinking on inter-city services extended beyond conventional rail technology: building new routes was politically unacceptable so a 'tilting' train was proposed to facilitate higher speeds over the sinuous main line network: the Advanced Passenger Train (APT). It was recognised that its development would be difficult so another train, utilising conventional technologies, was also developed: the High Speed Train (HST) which was to run at up to 125 mph. Prototypes of each began running in 1972¹.

The higher priority given to rail-oriented planning was reflected in the debate around the choice of location for London's third airport: all the options included a

¹ The same year that SNCF unveiled its prototype 'Train a Grand Vitesse' (TGV).

rail link to London (see appendix twelve). Buchanan, in his Note of Dissent, favoured Foulness and he expected a new railway would be built to it (Roskill, 1971, fig. 10.9): this was the most ambitious project to be countenanced since the war and was indicative of the new mood. Also BR convinced Heath's Government of the viability of a cross-Channel rail tunnel: a White Paper was issued in 1973, followed by a BR consultation document in 1975; completion was envisaged by 1980. The Government accepted that the full benefits could only be realised if there was simultaneous construction of new high speed rail links to it.

Despite this buoyancy with regard to the main lines, the Treasury driven search for rationalisation continued: BR's overall mindset continued to focus around capacity reduction. Lines continued to be brought forward for closure, albeit at a reduced rate, but there was also a remorseless generation of rationalisation plans: singling of double track, removal of passing loops and sidings, closure of spurs into industrial complexes, and removal of staff from stations.

The concept of the 'railhead', a station on the rationalised system to which customers would drive, clearly ran the risk of inducing them to remain in their cars for the whole of their journey. However it was used positively to justify new stations, a significant innovation: Bristol Parkway, opened in 1972, was located on Bristol's periphery, close to the intersection of the M4 and M5. The concept was also used, less convincingly, to make a virtue out of necessity when, in 1973, Alfreton station was renamed 'Alfreton and Mansfield Parkway'²: Mansfield is 8 miles from Alfreton and it was rather fanciful to see the renamed station as an adequate replacement. Nevertheless the concept showed BR's willingness to promote the network and was indicative of an optimistic side to the corporate persona.

Government was willing to invest in London's commuter network and the politically important Southern Region received £220m in 1970, and further commitments to electrification followed: £35m in 1971 for the lines out of Moorgate and King's Cross to Royston via Welwyn and Hertford. However, as evidence of the restricted vision, not even London's routes were safe from closure. Despite his experience of rail-oriented strategic planning, Hall fell under the influence of the Railway Conversion League (1970) and noted:

In some cases the motorways may use main-line railway tracks which are superfluous and no longer remunerative: the line out of Marylebone is an obvious example (1971, 149).

The Public Service Obligation and rail freight grants.

² The station was in fact renamed 'Alfreton' in the 1990s, when Mansfield regained its train service.

By the early 1970s it was clear that more support was needed for loss making passenger services than was being provided through the Section 39³ mechanism of the 1968 Act. The economy was racked by inflation and Heath's government was using control over nationalised industries to limit rises in prices and incomes: in 1974 the BRB noted that costs rose by 33 per cent but they were permitted to raise prices by only 16 per cent. The financial deficit continued a decade on from Beeching. A 'Rail Policy Review' was conducted by BR and the MoT and, although its conclusions were not published at the time, they were subsequently and were of great significance in setting out the principles underpinning railway policy:

- a) the railway existed primarily for the purposes of the passenger system;
- b) the standards and, therefore, the costs of track and signalling were determined primarily by the requirements of the passenger system;
- c) in the light of a) and b), where freight shared facilities with the passenger business, it should pay only its avoidable costs;
- d) on that basis, the freight business was capable (after a short transitional period) of achieving financial break-even without the aid of grant;
- e) the passenger business as a whole, at anything like its then size, was incapable of breaking even;
- f) the cost of the passenger system could not be reduced without service closures on a scale disproportionate to the expected savings;
- g) grant should be paid for the passenger system and not on a service by service basis (DoT, 1983, 8).

The 1974 Railway Act wrote-off a further £298m (1974 prices) of debt and empowered the Government to pay future subsidy as a block grant. As by then the UK was a member of the European Community, the method of providing support had to conform to EEC law and took the form of a Direction imposing a 'Public Service Obligation' (PSO) which provided that:

The British Railways Board shall, from 1 January 1975, operate their railway passenger system so as to provide a public service which is generally comparable with that provided at present....(appendix B in DoT, 1983)

Whereas the above shows that rail freight was not a political priority, there was debate over the relative track costs of road and rail: Government was sympathetic to the argument that rail was at a disadvantage and concerned about the environmental implications of growing lorry traffic. As a result, section 8 of the 1974 Act introduced 'freight facilities grants', which would be available for the development of rail infrastructure where it would transfer a measurable flow of lorry traffic to rail. An important feature of this mechanism was that it depended upon modal shift: in cases where a freight generating activity was granted planning permission and a condition was imposed limiting such movement to rail, then a grant

³ This was on a short term, line by line basis.

would not be available because no modal shift could take place. This discouraged the explicit use of planning powers to facilitate modal shift.

Transport White Paper.

A transport White Paper was published in 1977 (DoT, 1977) reflecting Government concerns about the rising cost of oil, erosion of the quality of life through road traffic, and the needs of non-car users. The Government restated their commitment to rail ⁴and identified the main line network's tasks (figure 21), but stated that it was not their role to be prescriptive about how different modes should be used.

Figure 21: 1977 White Paper: main tasks for the railways.

- a) to continue as the major public transport carrier of long-distance passenger travel on a network of services connecting all the major centres of population;
- b) to continue and develop their function, which is essential to the industrial strategy, in carrying large flows of freight from siding to siding, especially heavy flows of bulk traffic such as coal and ores;
- c) to continue as a major carrier of people to and from work within London's vast area of work places and dormitories;
- d) to continue to provide under the Public Service Obligation and, where they are judged locally to be the right way to meet local needs, local stopping services in many parts of the country; and to provide also those services which are required under agreements with the Passenger Transport Executives within systems of public transport in the conurbations they serve. (DoT, 1977, 46).

Whereas it was expected that inter-city passenger and all freight services would be commercially viable, subsidy would be available for commuter and rural services.

The most negative implications concerned freight:

Rail can undoubtedly offer a highly competitive service on longer hauls and for movement direct from siding to siding. But it offers no real alternative for most of the goods that now go by road.A substantial diversion of freight traffic from road to rail is not therefore immediately possible. Nor is it a sensible long-term aim (DoT, 1977, 39).

In order to reduce the reliance on transport it was recognised that the basis of land development decisions would have to change:

...housing and employment have become increasingly separated. Larger hospitals, schools, offices and shops to serve wider areas have meant longer and often more difficult journeys (1977,7).

But this was not reinforced by commitment to more prescriptive land-use planning or by encouraging BR to capture new markets: the separation of the DoT and the DoE made this unlikely in any case. By contrast, despite the intention to reduce expenditure on road building, there was an intention to more closely integrate road

⁴ It was significant that this was still seen to be necessary.

planning with land-use and economic planning, and special mention was made of how institutional arrangements could facilitate this:

The planning of road schemes must fit the wider economic and land-use plans in the regions, and it is the job of the joint Regional Offices of the Departments of Transport and the Environment to secure, with the local authorities and the Economic Planning Councils, that it does (DoT, 1977, 56).

The White Paper identified geographical priorities for road building which contrasted significantly with the stance taken towards the railway network which was focused on underpinning existing services through subsidy, rather than improvement. The most significant references to the network were concerned with new procedures for closures which, in what appeared to be buck passing, would more closely involve local transport authorities (DoT, 1977, 21-23).

At this time there was also a wide ranging inquiry into lorries and their environmental impacts (Armitage, 1980) which noted the effects of land-use change on demand for lorry transport:

New industrial areas have developed with no rail access of any kind. Indeed modern industrial estates are often not linked to the railway.....There has been a bandwagon effect (Armitage, 1980, 15).

The report considered a wide range of measures to ameliorate the growth of lorry traffic, one being using the planning system to influence the location of traffic generators. But there was little enthusiasm for this:

Land use planning is a weak instrument for controlling the effects of lorries for reasons inherent in our planning system (Armitage, 1980, 89).

Armitage did conclude though that structure plans and local plans⁵ should consider freight transport issues, although there was no specific recommendation that this include maximising the opportunities for modal shift to rail. His recommendations with regard to rail were restricted to suggestions for widening the criteria for giving Section 8 grants.

DoE planning guidance.

Heath's Government published a Manual on Development Plans (MHLG, 1970) which emphasised that:

In particular, the new system provides a means for the full integration of land use and transport planning throughout the process (MHLG, 1970, 4).

The appendix contained indicative policies including suggestions on planning for rail: 'emphasis on rail', 'concentration of growth along rapid transit corridor', 'district

⁵ Armitage noted that of the 1,600 or so local plans proposed by local planning authorities, work was in hand on only 350.

shopping centre at suburban railway station', and 'facilities for modal interchange' (MHLG, 1970, 71). Although this support was not reinforced by any further Government publications, the importance of designing to minimise walking distances to bus stops⁶ was emphasised and a quarter mile (400m) identified as a general guideline (DoE, 1973). The only other significant publication with regard to neighbourhood design was a reaction against the car oriented layouts of the 1960s, but this focused on traffic calming rather than pedestrian access to public transport (DoE, DoT, 1977)⁷.

Planning and the BR Property Board.

During the early years of the new Property Board, planning policy was more supportive of the railway network than it had ever been, so how did the Property Board respond? The approach was termed:

'Optimum Management', a professionally based, prudent policy that combined sale, where it was seen to be in the best interests of the railway, with retention and development where long-term income and capital appreciation indicated a better return (Biddle, 1990, 208).

Although this demonstrated strategic thinking, the underlying rationale was maximising income, not utilising the estate to promote ridership: where this happened, such as with regard to air space developments, the outcome was fortuitous. On these terms the Property Board was regarded as a success and, in 1975, became a self-accounting unit within the management structure, having yielded about £20 million a year. Lawrence realised that, without maintaining the supply of surplus land, it would be difficult to sustain this and he used his experience of the operating departments to persuade them to release property. The Board's confidence led them to launch what would eventually become their most successful project, the redevelopment of Liverpool Street station (Modern Railways, 1975, 334-336)⁸.

A new focus for planning policy.

The economic crisis led to abandonment of the Channel Tunnel project in early 1975. In 1976, Dennis Healey made deep cuts in public spending in order to reduce the Public Sector Borrowing Requirement, and requested loans from the

⁶ With hindsight it seems anomalous that this document did not embrace access to railway stations.

⁷ The other dominant planning concern in housing design at this time was poor elevational treatment by private builders and a loss of local identity: the Essex Design Guide was the precursor of many similar attempts to rectify this weakness (Essex County Council County Planning Department, 1973).

⁸ It was hoped to make a start on this 25 acre mixed use scheme in 1978, although the onset of recession delayed this for nearly a decade.

International Monetary Fund⁹. After years of expansion this introduced a new paradigm for the public sector; cash limits and budget cuts.

The crisis had important ramifications for planning policy which had been predicated on growth. Although urban poverty had been rediscovered in the 1960s (Coates and Silburn, 1970), the overriding mood had been optimistic. This changed as the economy turned down, population growth levelled off, and the shutters were brought down on public expenditure¹⁰. The policy focus turned towards the 'inner city problem' and what came to be known as 'urban regeneration'. Given the fact that inner city residents had typically been bus users, it was not to be expected that rail would feature strongly in any policy statement about the inner cities, except perhaps in London. What is more surprising is that 'Policy for the Inner Cities' (Secretary of State for the Environment, et al, 1977) contained very few references at all to transport and, in the brief reference it did make, concluded that:

The main practical requirement is likely to be for better and improved local roads and in some cases for better access to the primary road network (1977, 32).

This concerned the needs of industry rather than residents¹¹.

The limits to road building: London's ringways.

Buchanan inspired visions for cities began to encounter opposition once the public came to appreciate the scale of destruction necessary to accommodate the new roads and the intrusiveness of the finished product. The backlash came first in London as the draft Greater London Development Plan (GLDP) went to public inquiry in 1970/71, chaired by Frank Layfield. As the implications of the four proposed 'ringways', which formed the core of the transport policies, became better understood, the protests grew stronger: it was estimated that 20,000 houses would have to be demolished and the total cost was put at £2 billion at 1972 prices. The opening of Westway in 1970 drew attention to the impacts: 22,000 objections to the GLDP were registered, most of them against the roads. Plowden (1972) articulated the case against 'predict and provide', pointing out that facilitating public transport had implications for land-use policy: central London was the area of maximum accessibility and activity generators should be located there, as opposed to the GLC's strategy for the development of 'strategic centres' on the ringways. The

⁹ Needless so he said later, with the benefit of hindsight (Healey, 1990, 432-33).

¹⁰ This was initiated by Peter Shore's 'The party is over' speech in Manchester town hall (Shore, 1976)

¹¹ This failure to understand the importance of access to jobs and services for deprived communities, and the failure to consider the mobility provided by public transport as a prerequisite of regeneration, came to be seen as a major policy weakness (Lawless and Gore, 1999).

furor meant that urban transport policy moved into the glare of the political arena¹² wherein the policies of elected politicians were driven by campaigning community groups: by the 1973 GLC elections both Labour and Liberal parties were standing on an 'anti-ringway' ticket and, with a Labour victory, they were scrapped¹³.

This had positive implications for rail as the Government set up a London Rail Study which involved the DoT, the GLC, London Transport (now under GLC control), and BR. The results, published in 1975, put forward three options for capital investment ranging from £2000 million to £2400 million, with a figure of £1400 million being the minimum for renewals. The Victoria Line had been completed through to Brixton in 1971, when work started on the proposed Fleet Line (later renamed the Jubilee Line) from Baker Street to Charing Cross, and on extension of the Piccadilly line to Heathrow¹⁴. The London Rail Study recommended that the Fleet Line be extended eastwards through Docklands to Thamesmead: Docklands was already in decline and the need to improve its accessibility from central London was understood. However, these aspirations were quickly forgotten in the crisis of the mid-1970s.

The planning response.

The research underpinning the GLDP (GLC, 1971) included a sophisticated analysis of London's railway network. This showed that: railways covered 3 per cent of Greater London's area; there was on average one route mile for every square mile; there were 566 stations on the BR and LT networks; and that less than 6 per cent of London's population lived more than a mile from a station. Maps of rail accessibility were produced along with those showing passenger interchanges and freight facilities: there was a good understanding of the strengths and weaknesses of the network and of the importance of manipulating density in both residential and employment areas. The amended GLDP utilised this to develop rail-oriented policies: as a point of departure it considered that a feature of the new structure for London:

.....will be that a larger part of total activity, and a high proportion of all new activity, should be located in close relation to transportation facilities, particularly the underground and railway networks (GLC, 1976, 11).

¹² Transport 2000 was formed in 1973 as a nationally oriented anti-road building lobby group.

¹³ Hall (1982, 56-86) commented on how the ringways saga characterised a fundamental shift in transport planning for London, away from the Abercrombie-Buchanan infrastructure based grand plan, towards a more complex, community driven approach: public transport and walking became more important.

¹⁴ It should be noted that this was not an extension to the main line system as previously envisaged by Abercrombie and British Railways.

The Plan identified 'preferred locations' to which office and industrial developments would be steered, with rail access a significant part of their rationale. 28 strategic town centres were identified for retail development, 25 of which were also preferred office locations, and all except two were rail connected, the majority having been previously identified as rail passenger interchanges (table 9). The Plan recognised the effectiveness of plot ratio as a 'standard control' over development with particular relevance for transport, as well as the need to restrict private non-residential parking in major employment centres (table 10). It also contained general policies with regard to improving rail services. Surprisingly one proposal from the ringway era survived and, unfortunately, its success came to serve as a model for others to follow:

In addition to the Strategic Centres, Brent Cross is planned to be a large shopping centre for people who wish to use their cars for shopping (GLC, 1976, 81).

Production of statutory local plans was limited nationally and, in London, only six were formally adopted by 1980 (Simmie, 1994, 119): subsequently progress was swifter. With rail carrying the majority of the City's 300,000 daytime population, it is hardly surprising that the City of London Local Plan (Corporation of London, 1986) should have been supportive of rail projects and developments at rail interchanges, along with using plot ratio to manipulate density patterns. More surprising is the fact that Croydon utilised plot ratio too, accepted higher values 'in the vicinity of east Croydon station and West Croydon bus and railway stations' (London Borough of Croydon, 1982, 12), and adopted the GLC's recommended parking standards for shops and offices in Central Croydon. One of the most thoroughly developed rail-oriented local plans was Hammersmith and Fulham's (London Borough of Hammersmith and Fulham, 1988): this sought to improve existing and create new services and stations, and there was a rail freight section which sought to maximise the opportunities to retain/develop terminals. The plan contained an interchange strategy and used measures of public transport accessibility to underpin its land-use strategy. Together these plans showed that, despite the Thatcher Government's ideology, the reality in London was that road traffic growth could not be accommodated and rail access had to be developed as an alternative.

Table 9: Greater London Development Plan: rail accessibility and interchange facilities at preferred office locations and strategic centres.

<i>Strategic centre (1)</i>	<i>Rail services(2)</i>	<i>Strategic centre</i>	<i>Rail services</i>
Barking*	BR,U, BUS	Kingsland*	BR
Bexleyheath*	BR	Kingston*	BR, BUS
Brixton*	BR,BUS (3)	Lewisham*	BR, BUS
Bromley*	BR,BUS	Peckham*	BR, BUS
Clapham Junction*	BR, BUS	Richmond*	BR, U, BUS
Croydon*	BR, BUS	Romford*	BR, BUS
Ealing Broadway*	BR, U, BUS	Stratford*	BR, U
West Ealing			
Enfield*	BR, BUS, CARP	Sutton*	BR, BUS
Hammersmith*	U, BUS	Uxbridge*	BR, BUS, CARP
Harrow*	BR, U, BUS, CARP	Walthamstow*	BR, BUS(3)
Holloway	BUS	Wembley	BR, U, BUS
Hounslow*	BR, U, BUS	Wimbledon*	BR, U, BUS, CARP
Ilford*	BR, BUS	Wood Green*	U, BUS
Kilburn	BUS	Woolwich*	BR, BUS

1. Source - Greater London Plan 1976

2. Source - where more than one mode is cited the information on interchanges is from Greater London Development Plan: Report of Studies 1971

3. Brixton and Walthamstow became the termini of the Victoria line completed in 1971

* Preferred office location

Table 10: Greater London Development Plan: car parking standards for office and shop developments

<i>Area</i>	<i>Standard</i>
Central area of London	1 space per 12,000 sq ft of floor space
Inner Ring	1 space per 8,000 sq ft of floor space
More important suburban centres	1 space per 5,000 sq ft of floor space
remainder of outer London	1 space per 2,000 sq ft of floor space

Source: Greater London Development Plan, 1976, table 4

The provincial conurbations.

The anti-roads backlash was replicated in other conurbations, albeit more slowly, and many felt public involvement in transport policy was not welcomed by the DoT: this stimulated the birth of the 'direct action' movement (Tyme, 1978). Opposition to road building provided a receptive context within which to develop the case for rail: the creation of the PTA/PTEs and the new strategic authorities provided the means through which a closer relationship between land-use and railway planning could be promoted. The result was that the road-oriented land-

use/transportation planning techniques of the 1960s, were developed to include the option of investment in local railway networks.

The more structured approach to local government financial planning which had developed in the late 1960s¹⁵ led to the introduction, through the 1972 Local Government Act, of annual submissions by county councils of Transport Policies and Programmes (TPPs) (DoE, 1973). These were bidding documents specifying transport planning objectives and priorities against which central government made a financial settlement, largely through the Transport Supplementary Grant. However, because they were prepared by highway authorities, TPPs tended to reinforce the relationship between local authorities and road building, so the new structures did not guarantee pro-rail strategies.

Nevertheless, there developed several distinctive relationships between the PTA/PTEs and the railway system which can be summarised using three models. The first, where there was the most extensive use of the new powers, was in Tyne and Wear. In one of its first policy statements the PTE demonstrated its awareness of the importance of land-use planning to the ability of public transport to provide for various trip requirements:

Town Planning

The ability of public transport to cater economically and attractively for journeys for all or any of these purposes depends upon:

- a) How the various centres of activity are grouped in relation to one another.
- b) The ease with which it can move directly and quickly between them.
- c) The accessibility of stopping places to either end of the journey (Tyneside PTE, 1970, para.7.17).

A subsequent report noted the various failings of existing rail services, particularly the fact they were run-down¹⁶ and served central Newcastle poorly (Voorhees and Buchanan, 1973). Under the 1973 Tyneside Metropolitan Railway Act, the PTE proposed a light metro system linking the former north and south Tyneside networks by tunnels under Newcastle city centre. The strategy was founded on clearly identified objectives and the PTE took over ownership of the local lines from BR. Overall it was 'the first truly comprehensive approach to transport provision in any major British city' (Hamilton and Potter, 1985).

In the second model the PTEs relied on a co-operative relationship with BR to develop ambitious improvement plans for the BR network. In Strathclyde, before the PTA/PTE was created, reports of the Greater Glasgow Transportation Study (GGTS) (1968, 1971) had recommended that a priority should be the re-opening of

¹⁵ Utilising American 'Planning-Programme-Budgeting Systems' (PPBS) developed by Robert McNamara's Department of Defence for running the Vietnam war.

¹⁶ Instead of re-investing, BR had de-electrified the local routes in the 1960s.

the Glasgow Central Low Level route (the Argyle Line closed in 1964): the protracted development of investment cases to submit to Government for the re-opening of lines closed during the Beeching era was something that came to characterise the period. The GGTS noted that there had been a levelling off in rail ridership, despite the success of electrification, but that:

Greater use might be made of some existing electrified rail services, and those yet to be electrified, by the policies involving changes in land uses and location of planning projects being more integrated with the detailed usage of the rail network (GGTS, 1974, iv).

However the GGTS also favoured extensive motorway building and the Study (1968) recommended completion of inner, middle and outer ring roads around Glasgow and seven radials. The Greater Glasgow PTE, the shortlived forerunner of Strathclyde PTE, submitted a Clyderail proposal to the Scottish Office: this included the Argyle Line and another scheme (the St John's Link) to connect the line from Paisley over the Clyde into Queen Street Low Level. The investment case was broadly based being built on tackling multiple deprivation, improving central area accessibility, encouraging regeneration, and aiding the control of road traffic growth (GGPTE, 1974, section 4.1).

The continuing support for rail services by Strathclyde PTE was not reflected to any great extent in planning policy. Although background work (Colin Buchanan and Partners, 1974) noted that between 1965-72 £36M had been invested in the Clydeside network and ridership had increased by 5 per cent, it did not specifically address the question of how development might be managed to utilise the railway network and no special mention of Glasgow city centre was made with regard to any of its assets, let alone its accessibility by rail. The subsequent Strathclyde Structure Plan (Strathclyde Regional Council, 1979) focused on economic regeneration, rehabilitation of inner areas and peripheral estates, and the supply of land for housing and industry. Whilst the role of rail in providing access to central Glasgow was recognised (p47), certain lines were earmarked for improvement and/or re-opening (Schedule 2B), and a list of urban centres was produced to which public transport access would be improved, there was no development of a more sophisticated land-use/transportation strategy of the sort used in the GLDP. The railway schemes listed in the Plan were substantially overshadowed by the plans for road construction.

Another example of the second model was Merseyside: the Merseyside Area Land Use/Transportation Study (MALTS) (City of Liverpool et al, 1969) produced by

a broad grouping of interested parties¹⁷, recommended construction of a new road hierarchy over a 25 year period. However, it was accepted that this would not cater for all traffic needs and it was also necessary to improve public transport. MALTS recommended investment in the 'Loop and Link' tunnelling project under central Liverpool and had quite a lot to say about integration between land-use and public transport services, as shown in table 11. This was one of the most fully articulated policy statements of the period and could have formed the basis of a sophisticated planning agenda, applicable in Liverpool and elsewhere.

Table 11: Merseyside Area Land Use/Transportation Study: the layout of communities.

In the layout of communities serious study should be given to:
a) The inter-relationship of buildings and roads so that as many places of residence and work as possible lie within five to seven minutes walk - about five to six hundred yards- of roads suitable for the through movement of buses.
b) The layout of through roads in a way which will not detract from the overall operating speed of buses.
c) The need to permit as much medium and high income residential development as practical within reasonable walking distance of suburban railway stations.
d) The importance of permitting the greatest practical concentration of employment around railway stations in areas to which it is economical to carry public transport passengers by rail.
e) The need for entrances to railway stations to be located in a way which will place as many people as possible within convenient walking distance. In practice this could mean introducing entrances at both ends of the station.
f) The need to make it possible for people to reach main through roads as quickly as possible; this could mean introducing "short cuts" to save time consuming walks to the end of residential streets (City of Liverpool et al, 1969,34)

The West Midlands was an example of the third model where, initially, there were only very limited plans for the network. The transport study initiated in 1963 concluded that the cost of building roads to accommodate projected traffic levels would be too high and a more balanced approach was necessary (Freeman, Fox, Wilbur Smith and Associates, 1968). By 1972 the West Midlands PTE (WMPTE) had identified local rail services to be retained and developed, and had a strategy for improvements to station accessibility (WMPTE, 1972). Analysis of traffic potential noted developments in rail corridors: in particular that the city council's housing

¹⁷ Showing the unwieldy institutional structure of local government before the 1972 Local Government Act came into force these included: the City of Liverpool and the County Boroughs of Birkenhead, Bootle, and Wallasey; Cheshire and Lancashire County Councils; Bebington and Crosby Borough Councils; Huyon-with-Roby, Kirkby and Litherland Urban District Councils; Whiston Rural District Council; the Mersey Tunnel Joint Committee; the Mersey Docks and Harbour Board; the Ministry of Transport; the Ministry of Housing and Local Government; the British Railways Board; Crossville Motor Services Ltd. and Ribble Motor Services Ltd.

developments at Chelmsley Wood and Kingshurst, which housed 60,000 people, were not rail accessible, but that the site proposed for the National Exhibition Centre had rail potential, as did the route to Redditch new town. This illustrated how the PTEs were committed to their *local* network and were able to consider, in *detail*, how it could be integrated with patterns of land development. By 1972 Birmingham Snow Hill station was already closed and, although this plan contained no specific reference to it, it did vaguely propose new tunnels under the city centre and electrification of much of the local network, although these did not emerge as serious proposals at this time.

In the West Midlands three alternative structure plan strategies were developed, ranging from one which was decentralised and market oriented, to one which sought to concentrate all activity into the inner city (West Midlands County Planning Department, 1978).

There was a lot of internal debate about transport policies and the wisdom of relying on the private car at a time of energy shortage, despite the controlling party's commitment to cutting public transport subsidies (Struthers and Brindell, 1983, 79).

Perhaps inevitably, the adopted strategy (West Midlands County Council, 1982) embraced something from both extremes, a commitment to public sector investment in the inner city, along with provision of suburban sites for private sector housing and employment. Significantly there was concern that: 'Many participants (at the examination in public in 1981) considered the plan to be biased towards roads rather than public transport, particularly the railways' (Struthers and Brindell, 1983, 80 and 85). Whatever its shortcomings, this plan was notable for its very specific policies for re-opening railways and safeguarding disused trackbeds¹⁸ as set out in table 12. This was a significant issue in many areas given the growing evidence that closures had gone too far.

These strategic policies were followed through by the Birmingham Central Area Local Plan (City of Birmingham Council, et al, 1984) as shown in table 13, and this also referred to the use of development briefs for detail planning, something which Birmingham and other authorities used very successfully, as will be shown in the next chapter. Together these policies made up a very coherent policy framework, but it is very significant that this was project based and primarily concerned with reopening a closed system, rather than furthering the utility of an existing one through a more far reaching land-use strategy.

¹⁸ The former 11 constituent strategic planning authorities of the West Midlands County had produced structure plans prior to 1974 and these disused trackbeds had been protected by them.

Table 12: West Midlands County Structure Plan 1982: rail policies

Policy Tp 3: The restoration of the Birmingham to Stourbridge passenger services via Snow Hill will be commenced before 1991, and services now running to Moor Street station will be linked through the Snow Hill Tunnel to the Stourbridge services.

Policy Tp 4: Safeguarding of Railway Routes.

The railway formation of the former Wolverhampton low Level line between Wolverhampton and Handsworth junction will be safeguarded for the possible re-introduction of passenger services beyond the plan period (to 1991)

Policy Tp 6: Public Transport and Development.

The design and layout of re-development or new development will ensure the maximum accessibility of homes, workplaces and shopping to public transport.

Policy H 8: Housing Densities.

New housing, including higher density development (between 35 and 45 dwellings per hectare in most cases), will in general be encouraged in appropriate locations, particularly in and close to city and town centres and close to railway stations.

Table 13: Birmingham Central Area Local Plan 1984: rail policies

Proposal 4: Development of the Snow Hill Station Site.

a) The City Council wish to see the Snow Hill Station site developed in the following manner:

- i) On the Colmore Row frontage: offices.
- ii) Within the site: offices, multi-storey car parking, leisure facilities, hotel, housing and ancillary community facilities.
- iii) Underneath the above elements: a railway station.
- iv) To the Snow Hill-Queensway frontage, bus loading and unloading facilities.

b) The above elements will be defined in more detail together with the arrangements for vehicular and pedestrian access in a development brief to be prepared by the City Council in conjunction with the West Midlands County Council and the West Midlands Passenger Transport Executive.

Proposal TR 2: Passenger rail services to the city centre will be improved by:

- a) the conversion of Moor Street to a through station;
- b) the re-opening of the underground rail link between Moor street and Snow Hill;
- c) construction of a new station at Snow Hill;
- d) re-opening of the rail link between Snow Hill and Smethwick West.

Railway policy under Thatcher.

An important component of what came to be called 'Thatcherism' (Thornley, 1993) was populism, which was expressed as support for the personal freedom offered by private motoring. An early indication of the new politics was the reference in 1980¹⁹ of BR's London and South East commuter services to the Monopolies and

¹⁹ The Government's monetarist approach to economic management triggered a severe depression which, of course, led to a rapid decline in demand for railway transport for passengers and freight. The

Mergers Commission²⁰. The BRB, under the chairmanship of Sir Peter Parker (1976-82), had been prescient as they produced *'The Commuter's Charter'* (BRB, 1981): this marked their recognition that BR had to relate directly to its customers for political support rather than relying on Ministers. The document highlighted the relatively low levels of subsidy enjoyed by BR and London Transport as compared with other countries and the fact that, if commuter services were to be improved significantly, the costs would lead to unacceptably high fare levels. The community benefits from a well used railway were cleverly described as 'invisible earnings' (BRB, 1981, 1) and were used to justify bridging the funding gap by subsidy. Several ways in which this could be done were highlighted: taxes on businesses, including Parisian style payroll taxes; sales taxes; tourist taxes; road user taxes; and local authority contributions. The document did not refer to taxation on betterment from property development²¹ or to more focused exploitation of BR's property portfolio.

BR had some friends in Parliament: in 1981 the 'Speller amendment' to the 1962 Transport Act allowed BR to introduce service improvements on an experimental basis; if they subsequently failed to become viable they could be withdrawn without invoking the statutory closure procedures. This removed a significant disincentive to service and station development.

The 'Review of Main Line Electrification' (DoT, BR, 1981) considered a range of options from a base case of ongoing schemes, through to one which included most of the network. Analysis showed that all, except the smallest, gave a rate of return of at least 11 per cent. The report concluded that:

.....it would take an unlikely combination of adverse factors to undermine entirely the prospect that a programme of main line electrification would be financially worthwhile; ie earn a return of at least 7% (DoT, BRB, 1981, 2)

This was picked up and applied by the DoT as a template against *all* subsequent investment: this came to be seen by critics as one of the major sources of bias

overall mood was sombre and Peter Parker's opening comments in the 1980 annual report were: '1980 was a grim demanding year for British Rail' (BRB, 1980, 7)

²⁰ In welcoming the findings of the inquiry in the 1980 annual report, Peter Parker stated that: 'We seek closer co-operation with our operating partners in London Transport and the GLC and twelve county authorities in the area' (BRB, 1980, 9). This was evidence of the growing awareness of the need for close working with local government which had positive implications for the railway-planning interface.

²¹ Advisedly so as one of the first legislative actions of Mrs Thatcher's Government was to rescind the 1975 Community Land Act which had been the previous Labour Government's abortive attempt at giving local authorities a lead role in the development process through land acquisition and access to betterment.

against railway investment, given the use of social cost-benefit analysis to justify investment in road schemes.

The benefits of electrification were defined as lower maintenance costs and increased ridership, but the Review referred to a submission from Transport 2000 as to the possible implications for the locational decisions of the railway's customers, and that changes producing increases in rateable values could be seen as an external benefit which should be considered. However the Review's authors considered that:

There is insufficient evidence of the relationship between a programme of main line electrification and future land use or settlement patterns to enable a view to be taken (DoT, BRB, 1981, 77).

What is striking about this is that the question was not raised as to whether land-use planning should be used to deliver these. The discussion was couched in terms of the response of businesses to electrification, as though this occurred in a vacuum which public policy was unable to influence: here was evidence of the Government's market led approach.

BR was affected by privatisation and the hotels and Sealink passed quickly into the private sector²². But, for wholesale privatisation, the Government's priorities were the highly profitable utilities. However, in a remarkably prescient comment, Bonavia noted that:

...in 1983 the railway achieved a surplus of £64 millions before interest charges, etc, after grants totalling £934 millions from central Government and local authorities, and £24 millions grants for special purposes. If - and it is a big 'if' - there was a guarantee that grants at this level would continue, might not a purchaser be interested in taking over the railway? (1985, 130).

The Serpell Report.

Although privatisation was not favoured, the continued dominance of the Treasury view was illustrated in 1982 when David Howell, Secretary of State for Transport, set up a committee with the following terms of reference:

To examine the finances of the railway and associated operations, in the light of all relevant considerations, and to report on options for alternative policies, and their related objectives, designed to secure improved financial results in an efficiently run railway in Great Britain over the next 20 years (DoT, 1983, 1).

Initially the BRB welcomed this review as they expected to benefit from it, but this mood changed when the Chair was named as Sir David Serpell, a rail hawk who had served under Marples. Given the totemic status of public expenditure to the New Conservatives, Serpell's investigations looked very threatening. He considered that

²² As did the National Freight Corporation, the road transport company formed under the 1968 Act (McLachlan, 1983).

there was a reasonable prospect that the freight business could break even by the mid-1980s, but advised that the Board should be ready to withdraw promptly from unprofitable traffics (DoT, 1983, 24). Serpell showed the rising dependence of passenger services on grant and the growing disparity between expected performance, as set out in BR plans, and outcomes. In particular the low load factor of the Provincial services was noted, 20 per cent, and reference made to the potential to make savings by bus substitution. Serpell set out what he saw as general weaknesses in the Board's financial planning (DoT, 1983, 57) and considered the options for the future, illustrated by maps of reduced networks. Predictably his major conclusion was:

that reductions in the size of the network will be required if the level of financial support for the railway is to be lowered substantially.... (1983, 85).

The shrewdness of BR's management strategy under Robert Reid (1982-90) was reflected in the fact that Serpell was quickly forgotten: a significant factor was the maps which, like Beeching's, produced a political backlash. The Government stated that it was not seeking major route closures, but accelerated the rate at which the PSO grant was to be reduced²³, and asked the Board for its views on replacement bus services. A further fillip was given by the announcement in 1984 of electrification of the ECML²⁴. In the same year further approvals included extensions of existing electrified routes to Hastings, Cambridge and Norwich.

The continuing drive for rationalisation of the railway network.

The continuing strength of the anti-rail culture within Government was reflected in publication of a report looking into the potential for conversion into roads of some of London's rail routes (Foster, Posner and Sherman, 1984). This considered orbital routes such as the North London Line, and the Marylebone-Aylesbury radial route. The report noted the narrowness of rail alignments compared to roads and the only route subject to further consideration was the Marylebone line, as a route for National Express coaches. BR went as far as bringing Marylebone forward for closure, but the idea ran into problems over headroom limitations. The fact that such ideas received official encouragement, rather than the lines being improved as railways, highlighted the Government's stance.

There was further evidence of this with regard to rural lines: bus-substitution was pursued by BR in response to Government pressure and various lines were put

²³ When Nicholas Ridley became Secretary of State for Transport he brought forward the reduction of PSO from £700m to £635m from 1988 to 1986: the targets for BR implied retention of roughly the same size of railway with a 25% cut in central Government funding (BRB, 1983).

forward as candidates. Closures continued to be brought forward too, the most notable being the Settle-Carlisle line, one of the remaining duplicate trunk routes. This saga which began in 1981, provided volumes of evidence for conspiracy theorists who, since the days of Beeching, saw BR's senior managers as too willing to close lines to please their political masters. However, the case also showed the changed political context of rail policy making and the potential to use the institutional structure to influence BR and Government (Towler, 1990). Closure was formerly proposed in 1983 and eventually withdrawn in 1989.

The final irony was that Ron Cotton, the manager briefed to run the line down, worked with local authorities, businesses, communities and pressure groups to double ridership. As part of the campaign the local authorities formed a Joint Steering Group to develop the case for retention and practical policies to reinforce the role of the railway in its hinterland. The whole of the alignment was declared a conservation area, so that even if the line was closed the trackbed and structures²⁵ would be retained.

The Channel Tunnel.

The renewal of interest in the Channel Tunnel was a surprising development. President Mitterand and Mrs Thatcher developed a very co-operative relationship and the outcome was the 1987 Channel Tunnel Act: the political compromise was that the tunnel would only be funded by private sector finance. The political differences between Mitterand and Thatcher were reflected in their respective approaches to the rail networks which would serve the Tunnel. In France there was a rapid follow through with State commitment to build TGV-Nord from Paris to Calais, with a major interchange and associated commercial development at EuroLille. Such investment was not on the agenda in the UK: despite the potential boost to passenger services which would result from the link with European high speed systems, the Government's ideological straitjacket constrained BR's scope to develop a 'vision' for the Tunnel. Harman (1989, 647) criticised the industry for this and Serplan was generally critical of the Government's failure to introduce effective regional planning for the South East and to incorporate rail planning within this:

This opportunity must be seized: at the time this report is being prepared, there is no evidence that the Government or British Rail are showing the required foresight (Serplan, 1989).

²⁴ The £306m investment was to be funded internally, so all BR had secured was permission to spend its own funds, which was indicative of how politically hamstrung it was

²⁵ The elevated and rugged country through which the route passes means that it is characterised by having many tunnels, embankments and viaducts, typified by Ribbleshead Viaduct which was adopted as a campaign logo.

Nevertheless, section 40 of the Act which instructed BR to consult with regional bodies about Tunnel rail services, acted as a stimulus to the growing interest in rail amongst local planning authorities, as well as private sector interests. Contemporary research showed that, with regard to freight traffic, these local interest groups were particularly concerned that :

the requirement for a minimum 8%²⁶ per annum return will severely limit the implementation of regional recommendations for investment, will lessen rail's market share, and could have an adverse effect on regional economies (Farrington et al, 1990, 143)

The limitations of the UK's vertical loading gauge were becoming more apparent at this time as maritime containers were increasing in size, and the proposed link with Continental railways served to bring the issue into sharper focus. But no action was proposed as the Government had made it clear that support for the Tunnel project would not translate into plans for public investment in the domestic railway network.

Deregulation of planning and its limits: the green belt battle.

The Conservative's *laissez-faire* approach to planning was reinforced by the fact that 43 per cent of their MP's had links with property interests (Healey et al, 1988). As well as initiating UDAs and EZs, the 1980 Local Government Planning and Land Act introduced Land Registers, lists of publicly owned vacant sites, and forced public bodies to place this land on the market. This bolstered attempts by the Property Board to dispose of land quickly and was a significant push towards utilising it for development which would yield immediate financial returns, rather than securing uses which would utilise the railway network²⁷. This was followed by the creation of EZs, eleven in 1981 with a further fourteen in 1983-84.

But it was not all plain sailing for the Government: in 1983 they signalled their intention to relax green belt controls which provoked opposition from a united front of environmental groups and Labour and Tory controlled local government bodies. In Parliament the Government was opposed by over sixty Tory MPs²⁸ and the pressure forced them to back down and issue a revised circular re-affirming commitment to green belts, using this to demonstrate their green credentials. This was a pity as

²⁶ This was 1 per cent above the 7 per cent minimum rate of return cited in the main line electrification report, showing a further tightening of the Treasury constraints.

²⁷ The Government did not take any more radical steps to create a freer market in land as suggested by Chisholm and Kivell (1987), presumably because their suggestions would impact negatively on private sector interests.

²⁸ The total area of green belts had increased significantly since the mid-1970s as articulate residents realised it could be used to protect their environment and maintain property values: most such residents had Tory MPs (Elson, 1986).

there were good planning reasons to reconsider green belt policy, not the least of which was the effect of stimulating demand for commuting by car. Green belts also sterilised land along railway lines, particularly around stations, which could have been developed for rail served settlements: all too often the stations had already been closed.

Despite this setback, the Government pressed on with their deregulatory agenda which was embodied in the titles used for subsequent White Papers: *'Lifting the Burden'* and *'Building Businesses Not Barriers'* (DoE, 1985, 1986). The implications were that developers should only be refused planning permission where development 'would cause demonstrable harm to interests of acknowledged importance' (DoE, 1986, 21): the policies to focus major commercial developments in town and city centres built into the first generation of structure plans were being ignored.

As the economy boomed growth was concentrated in the broader South East region, especially along motorway corridors such as the M1, M4 and the M11: 'Sunbelt Britain' (Breheny et al, 1989). This phenomenon was ascribed to four factors, one of which was:

.... a major concentration of producer services activity largely as a result of the decentralisation of activity from central London to free-standing towns and cities within a radius of about 150km of the metropolitan area (Mason et al in Breheny et al, 1989, 57).

This suggested to the Government that the markets for light industrial and office buildings were converging with firms requiring a new type of flexible, high quality building (Henneberry, 1988). Debate focused on the impact of the Use Classes Order (DoE, 1972) in requiring planning permission to change the use of such buildings and this produced the overarching B1 Business class (DoE, 1987, 3), which formally freed large, speculative, office developments from restrictive locational policies (Haywood, 1996). In the buoyant market of the late 1980s, this meant that the tremendous pressures in all the major conurbations for out-of-centre office developments were irresistible. The locational advantage to developers was the use of cheap land for high value development, with easy access to the major road network and abundant on-site parking as the marketing attractions. Contemporary research in the USA showed the likely outcomes (Cervero, 1984): the implications for the railway network were very negative.

London: the Docklands debacle and the emergence of Network South East.

The promotion of major urban rail projects had ended with the mid-1970s crisis, and the cost overrun by the Tyne and Wear Metro reminded Government of the financial risks. It was surprising therefore that they should have supported the

introduction of a new form of rail transport into London, namely light rail. Promotion of Docklands regeneration meant that, because its inaccessibility was seen as a barrier to private investment (LDDC, 1983), it was necessary to invest in some sort of public transport system and a segregated rail system was the only practical alternative. The Government would only fund a low cost solution so, in 1982, they agreed to provide £77 million for the Docklands Light Railway (DLR), a low capacity system capable of carrying 8000 passengers per hour, which would run between Tower Bridge and the Isle of Dogs, with a link to Stratford where there would be interchange with BR's Essex commuter services and the Central Line.

There was no overall land-use/transportation strategy for Docklands and the Government had no reservations about encouraging the step change in the scale of development presented by the Canary Wharf scheme, which became associated with Olympia and York. This envisaged 1 million square metres of development on about 30 hectares of land and led to the estimated number of jobs on the Isle of Dogs increasing from 25,000 to 65,000, generating a commuter flow which could not be serviced by DLR. What followed was a gradual shift in Government policy in response to the transport problems the new developments were creating. Further investment in the DLR was committed, in partnership with Olympia and York, to increase the capacity to 15,000 passengers per hour and to link it to the City by tunnelling to Bank. Eventually, in 1993, the Government approved construction of the Jubilee Line extension which could carry 24,000 passengers per hour in each direction (Willis, 1997). The disregard in Docklands for integration between land development and transport was widely criticised as the most striking example of the failure of the Government's *laissez-faire* approach (Brownhill, 1990; Church, 1990; Simmie, 1994).

Rail traffic volumes closely follow the economic cycle and the late 1980s boom coincided with the development of favourable institutional arrangements as set out in chapter 6. In addition, there was growing concern over road traffic congestion and pollution. The costs of congestion were used by the road lobby to justify further development of the trunk road network (British Roads Federation, 1987) and concern was deepened by publication of revised National Road Traffic Forecasts (DoT, 1989a) which projected increases in traffic over 1988 levels of between 83 and 142 per cent by 2025. The Government responded by announcing a greatly expanded road building programme (DoT, 1989b). Despite this, the concerns over road traffic provided an opportunity to argue the case for rail and there was widespread

development of schemes to improve passenger services, which were usually incorporated within the land-use planning process.

London was a prime example: despite decentralisation, Central London's economy grew rapidly and this had profound transport impacts. Green²⁹ (1989) demonstrated that although commuting into Central London increased by 7 per cent between 1985-88, the numbers travelling by road actually decreased, whilst those travelling by Network South East and the Underground increased by 16.7 per cent and 12.9 per cent respectively. For 14 years from 1970 rail commuting into London had declined, but the 1988 total was the highest ever recorded. The Central London Rail Study (DoT et al,1989) was jointly produced by Network South East, London Regional Transport, London Underground and the DoT and contained a range of proposals for massive investment. These included East-West and North-South Cross Rail, and improvements to the recently introduced Thameslink system (see chapter eight)³⁰. Green used estimates of employment growth to argue for massive investment which included a new generation of EMUs and DMUs, to be branded as 'Networkers', and investment in neglected routes such as those serving Marylebone³¹ and the London Tilbury and Southend line. He also proposed development of services to Stansted and Heathrow airports, and major projects such as the Cross Rail projects and use of the proposed Channel Tunnel Main Line from King's Cross for express commuter services.

The provincial conurbations.

In Glasgow, implementation of the Argyle line project, followed by upgrading of the underground system, the Subway, produced an escalation in costs for Strathclyde PTE, exacerbated by falling ridership associated with the recession. The PTE reported that revenue as a percentage of costs had fallen from 62 per cent in 1977 to 43 per cent in 1983 (Strathclyde Transport and BR Scottish Region, 1983). So, even this pro-rail PTE had to introduce a cost cutting strategy which included driver-only operation, the 'Basic Modern Station' concept which replaced staff by ticket machines, closure of the Paisley Canal line, and thinning of the timetable elsewhere. The Section 20 network was in crisis and there was a need for investment and reduced operating costs: the alternative was a steady run down on

²⁹ The transfer of Chris Green from ScotRail to become the head of Network South East put in place a politically astute manager who was alert to the impacts of property development. Like Gerald Fiennes, Green was one of the few BR managers to emerge from the anonymity of public service.

³⁰ These schemes picked up on the themes of the wartime plans as they would enable passengers on the main line railways to reach destinations in Central London without changing to the Underground, as well as offering rapid journeys across London.

all but the most highly used lines. As a symbol of its commitment to rail, even during this difficult period the PTE managed to maintain its capital programme with the proposed electrification of the route out from Paisley to Ayr. This was approved by Scottish Secretary George Younger in 1982, one of the conditions being that the PTE should obtain European Regional Development Fund (ERDF) funding, showing the widening of the funding net for the social railway and the need to demonstrate socio-economic benefits. A working group was set up in 1983, comprising members and officers, BR managers³², and trade union representatives³³, which produced an investment plan coupled to reductions in manning levels: funding was to be from a combination of the PTE, the Scottish Office and the ERDF.

Approval of the original DLR investment served to stimulate interest in light rail as a tool to reduce road traffic congestion in other cities and to link this to urban regeneration. Plans usually employed a combination of street running and segregated track utilising former BR lines, and the Provincial Sector was positive in its attitude to these (Williams, 1992)³⁴. The first proposal to crystallise as a fully costed project was in Manchester in 1985 (Knowles, 1996), and this will be considered in chapter nine. What was significant to the role of land-use planning in these proposals was that they were to be funded under section 56 of the 1968 Transport Act. Changes to the procedures governing this mechanism (DoT, 1989c) meant that funding would be predicated on the expectation that schemes would provide benefits for the wider community, or 'non-users, and this could provide the basis for public subsidy. Although it was expected that the major area of non-user benefit would be reduced traffic congestion for road users, there was an expectation of regenerative effects too, including the impact on land development. The second project to come to fruition was in Sheffield where Parliamentary powers were in place by 1989. Government funding was committed by Michael Portillo in 1990. Line 1 was to be largely street running whereas Line 2, which was to run through the Lower Don Valley regeneration area to the proposed Meadowhall shopping centre, used a route released by BR (Lawless and Dabinett, 1995). The North American literature showed that a very interventionist approach was needed to ensure that property investment took place around stations on new rail systems (Heenan, 1968; Knight

³¹ After years of closure threats, the Chiltern line was subject to a 'total route modernisation' plan which included new trains, new signalling and station improvements.

³² This included Chris Green before his move to NSE.

³³ The inclusion of the unions to oversee acceptance of job cuts, showed their continuing influence as a constraint on BR management, despite the onset of Thatcherism.

³⁴ The surge of interest in light rail saw 40 schemes mooted nation wide (Taylor, 1993), and was likened to the Railway Mania of 1844.

and Trygg, 1977; Cervero 1984). Similarly, research by Hall and Hass-Klau into the impact of rail investment on city centres in the UK and Continental Europe had concluded that:

Transport improvements by themselves can never achieve anything; they merely facilitate urban change. They have not had an obvious or marked effect on the structure and organisation of the city, even in Germany - though that may well happen in time. It will only happen, however, if other urban policies make it do so (1985, 170).

Given the Government's relaxed stance towards road-oriented decentralisation, their support for light rail projects based on assumptions about property development along their routes was surprising. By the time that these schemes were entering the construction phase local planning authorities were producing their unitary development plans (UDPs) so, theoretically, there was an opportunity to produce planning strategies to steer development to nodes on the networks. However, the Government had no enthusiasm for such an interventionist approach³⁵ and, in any case, the areas of most intensive redevelopment in Manchester and Sheffield were being managed by UDCs, so the prospects for rail oriented planning were poor to say the least. Even in Newcastle, where the locally owned Metro was already in operation, the city planning authority's first thoughts about the content of its UDP were a depressing reflection of the hostility of this ideological context. In a document running to 169 pages, transport and its implications for planning merited only one and a half pages of vague intentions (Newcastle City Planning Department, 1986, 83-84).

The 'shire' counties and Provincial.

The creation of the Provincial Sector facilitated development of the investment case to replace ageing Modernisation Plan rolling stock (Cornell, 1993). This led to 'Sprinterisation': a second generation of mainly two-car DMUs which were faster and more efficient than their predecessors. These were to be used as part of a more fundamental change of operating practices whereby the running of infrequent but high capacity trains would be replaced by frequent, faster, lower capacity Sprinter trains. The Sprinters would contain denser seating arrangements than their predecessors as the Government would only authorise a 'two for three' replacement programme, which promised further cuts in operating costs³⁶. By 1990

³⁵ The Strategic Guidance for Greater Manchester (DoE, 1989), for example, made very little mention of office development (a major trip generator), made no mention of Salford Quays (see chapter 9), and the only mention of Manchester Airport was to state that: 'Manchester Airport will grow apace during the period of this Guidance' (para. 5).

³⁶ Although this would eventually provoke a debate about space standards and passenger comfort, and the difficulties of carrying luggage and cycles in these 'cost effective' trains which have no guard's van.

the situation for Provincial was very positive and there were no extant proposals for line closures or bus-substitution (Whitehouse, 1990).

The most notable location for development of railway services through integration with 'shire' county council policies was in the Valleys, where there was a long standing culture of support within BR and the community. However, by the early 1980s, even the Valley Lines were in decline: ridership fell by 25 per cent between 1980-83 as local unemployment and fares rose. Within the 'nationalised monolith' such local systems were regarded as 'hopeless cases', with continual cost cutting as the only strategy, with inevitable consequences. However, from 1983 the Valley Lines enjoyed a remarkable renaissance (Clark, 1993; Davies and Clark, 1996) as a devolved structure gave local managers their head: they developed a growth strategy which produced fares reductions, increased service frequency, plans for 20 new stations, and re-opening lines. South and especially Mid Glamorgan County Councils played a significant role by developing pro-rail policies in their respective structure plans and providing capital from their transportation budgets:

Perhaps the most fruitful relationship ever to exist between non-metropolitan councils and a railway company in Britain was that between BR and Mid and South Glamorgan county councils in the 1980s (Davies and Clark, 1996, 95).

Although the experience in the Valleys was arguably the most fruitful involvement of the shires in railway development, it was not unique: by the late 1980s Durham, North Yorkshire, Lincolnshire and Lancashire were investing heavily (Sully, 1989). Nottinghamshire, Derbyshire and Leicestershire began to develop plans on the scale of the Valleys and to incorporate rail strategies into their statutory development plans. The most notable of these was the 'Robin Hood Line' scheme to reintroduce rail services between Nottingham, Mansfield and Worksop, these having been withdrawn in 1964 and part of the route closed and disposed of³⁷. The project used compulsory purchase to return this to public ownership: further evidence of the over zealous closure and disposal strategy and the failure of the planning system to safeguard the alignment. The policy goals behind the project were concerned with reducing traffic congestion in greater Nottingham, and with increasing personal mobility for people in the declining Nottinghamshire/Derbyshire coalfield. Nottinghamshire County Council was the driving force, supported by Derbyshire and the districts: together they formed a 'Robin Hood Line Steering Group', with the Provincial sector as a member. The degree of local authority commitment necessary

³⁷ This was in the Leen Valley where in the C19 three companies had each built a line for the coal traffic, one of the classic examples of route duplication, but all were closed and disposed of post-Beeching.

to progress this project was reflected in the fact that, because it stood outside the PSO mechanism, they would have to supply all the capital and be prepared to underwrite any operating deficit.

The local authority planning functions lent support through strategic policy development as expressed in: structure plans; case making to secure funding; and in the detail of station location and development which was tied into local plans (Haywood, 1992). However it is indicative of the overall state of contemporary policy development that Nottinghamshire's replacement structure plan of 1991 still did not contain prescriptive rail corridor policies. However, Leicestershire developed more innovative policies to underpin its commitment to the reintroduction of rail passenger services over two routes (Haywood, 1992), which were related to a land development strategy based on 'transport choice corridors' which:

..are based on the railway lines in the County, along which new local railway services are proposed, and along the A6 between Leicester and Loughborough. This is the only bus route in the County which has the potential to offer, in the foreseeable future, a realistic choice of transport. Ideally, development land should be allocated in locations within walking distance of a station or proposed station or the A6 bus route. Walking distance is usually about 1 kilometre (half a mile) (Leicestershire County Council, 1991, para 2.37)

National policy in the 1990s: land-use/transport integration again.

Public concern over traffic pollution, congestion, and loss of countryside led to the emergence of the 'New Realism' (Goodwin et al, 1991) with regard to the transportation debate: 'predict and provide' was being fundamentally challenged. The political pressures led to significant policy shifts: the fallout saw replacement of Nicholas Ridley by Chris Patten as Secretary of State for the Environment, and he introduced a more interventionist approach. This began with publication of 'This Common Inheritance' (DoE, 1990): whereas this discussed the role that managing land-use and transport could have in reducing impacts on the environment, it failed to draw any conclusions:

... not enough is known about the relationship between choice of housing and employment location and transport mode to allow the Government to offer authoritative advice at this stage (HMSO, 1990, 87).

Given the literature which this thesis has reviewed, it is clear that the reason for this was political rather than technical: a U-turn from *laissez-faire* to a more prescriptive regime would need to be gradual and carefully presented. Whatever its shortcomings though, the White Paper was a crucial part of the move towards seeing the relationships between land-use and demand for transport as something which the planning system should address as part of what became the 'Strategy for Sustainable Development' (DoE, 1994a). Encouraged by the evidence of policy shift, lobby groups pressurised the Government with a series of reports on the

transport crisis and the need for radical change (Owens, 1991; Joseph, 1991; Sinclair, 1992; Roberts et al 1992)

In order to develop a firm basis for policy the DoE sponsored research (DoE, DoT, 1993) which showed that, in order to promote the use of public transport, trip generating uses should be located in corridors well served by public transport, and also identified possible areas of policy tension:

- the preservation of green belt and possible, selective urban expansion within transport corridors; and
- the safeguarding of well-accessed locations for uses 'needing' such locations and local economic or environmental considerations (1993, 65).

This was followed by research by Breheny, Gent and Lock (1993) into private sector new settlement proposals, there having been 184 of these between 1980-92. This evaluated five alternative development models but, although transport implications were considered in the broadest sense, particularly with regard to energy consumption and ease of providing public transport, explicit relationships with the railway network were not explored. However, the overall conclusion was significant:

If the desire for sustainability is given great weight, then, taking all considerations in the round, new settlements of a scale approaching 10,000 dwellings (25-30,000 population) -with supporting employment and other facilities and amenities - would be the most desirable form of urban development other than urban infill (Breheny et al, 1993, 81).

Settlements of this size could be expected to support a railway service. Significantly, the report went on to draw attention to the fact that this size was comparable to that of Letchworth and Welwyn, but did not note their location on the same railway corridor or the prominent role that the station played as the focal point of their layout. This omission showed the limitations of contemporary planning ideology.

This movement on land-use policy was paralleled by changes in transport policy, stimulated by the impact of the 'eco-warriors'. The confrontations³⁸ produced a political alliance between the young idealists and, much more threatening to the Government, the respectable middle class. It was this which ended 'predict and provide', rather than research by consultants and academics, although this provided the intellectual justification. There was in fact a surge in contemporary publication which explored the concept of 'sustainable development' and its 'deep green' ramifications (Jacobs, 1991; Douthwaite, 1992): planning ideology became concerned with how development patterns could be manipulated to facilitate use of

³⁸ Battles took place at the site of the Bath Eastern By-pass, the M11 extension and the M3 extension through Twyford Down.

public transport, especially railways. This produced the concepts of the 'sustainable city' and the 'compact city' (Breheny, 1992; Breheny and Rookwood, 1993; Haughton and Hunter, 1994): although the language was new, this was clearly a return to the ideological strands developed in the late 1960s and 1970s, which had been largely ignored since the early 1980s³⁹.

The new mood produced a significant change in the TPP process: by the 1980s this had become part of the 'predict and provide' mechanism. It was recognised that transport policy needed to be co-ordinated across local authority boundaries, ie. that transport planning has a strategic dimension, and that the TPP process needed to encourage use of transport modes other than cars⁴⁰. This led to introduction of the 'package approach' whereby authorities were encouraged to develop joint strategies, which would explicitly be in step with those in UDPs, to secure modal shift from the car. But there was no explicit steer towards promoting use of local railway networks other than to point out that:

Public transport proposals for which the Government is able to consider resource allocations include new railway and bus stations, heavy and light rail schemes in urban areas, bus priority measures and guided busways (DoT, 1993, 10).

Encouraged by the ideological swing, local transport authorities began to develop more ambitious strategies. Strathclyde pointed out the importance of the Government acting to manage decentralisation more effectively:

Resisting these pressures will require a continuation of the past strong co-operation between strategic and local planning authorities. It will also require the Government to support the planning authorities through decisions on development plans and planning inquiries and to implement the principles of sustainable development set out in 'This Common Inheritance' by containing unnecessary decentralisation (Strathclyde Regional Council, 1991, 52).

Authorities in the West Midlands carried out a series of Integrated Transport Studies followed by publication of a twenty year public transport strategy (WMPTE, 1992): this envisaged a further cross-city rail link, electrification of local railways, improvements to the overloaded New Street station, new stations, and a light rail system, the first phase of which would utilise the safeguarded trackbed between Snow Hill and Wolverhampton.

The process of change was given added momentum by the arrival in 1992 of John Gummer as Secretary of State for the Environment, as he seemed to undergo a quite genuine change of outlook as a result of exposure to the sustainability

³⁹ The resurgence was international too, with 'transit planning' being a part of the American 'New Urbanism' movement (Calthorpe, 1993; Katz, 1994).

⁴⁰ There was little consideration of freight transport issues by local authorities, other than with regard to road maintenance and bridge strengthening for heavier lorries.

debate. With regard to transport and land use, this produced the revised version of PPG13 which, in order to reduce car dependency, stated:

...local authorities should adopt planning and land use policies to:

- * promote development within urban areas, at locations highly accessible by means other than the private car;
- * locate major generators of travel demand in existing centres which are highly accessible by means other than the private car (DoE, 1994b, 3).

It is important to note the generality of the language with which the support for public transport oriented planning was expressed: there were no quantitative targets for the density of development around stations, or utilisation of accessibility measures to specify the distance from stations within which major trip generators should be located. Neither were planning authorities required to produce per capita data on railway route miles or station provision of the sort produced for the GLDP. This was despite the fact that, particularly in London, planning and transport authorities had utilised public transport accessibility measures for many years, and the growing computer based technology of geographical information systems made their application easier (Kerrigan and Bull, 1992).

The new PPG also endorsed the need for modal shift to rail for freight and recommended that planning authorities should designate distribution sites next to railways and safeguard rail connected, or rail connectable, sites for freight generating development. Support for rail freight had been present in minerals policy guidance for several years, but MPG 10 was particularly notable in that it was the only piece of planning policy guidance this research has identified which contained data about rail freight (DoE, 1991)⁴¹: stronger support for rail would have led to much wider utilisation of such data with target setting.

The scale of the policy change was reflected in the chosen alignment for the Channel Tunnel Rail Link (CTRL), which the Government had reluctantly conceded had to be built. After pressurising BR to find the cheapest and most operationally efficient route, the Government, under the influence of Michael Heseltine, opted for an alignment from St Pancras to Stratford, and thence through the Thames riverside area of Essex to north Kent. This high cost option with its miles of tunnel, was justified on strategic grounds because of its regenerative impacts (DoE, 1993), a strategy eventually branded as the 'Thames Gateway' (Thames Gateway Task Force, 1994). Support for this project and the many other proposed rail links for London which had their roots in the Central London Rail Study, was followed

⁴¹ It noted that the percentage of finished cement products moved by rail from production sites ranged from 61 per cent at the Hope Valley plant in Derbyshire to 0 per cent at several others, with only 7 of the 19 sites listed having rail carrying more than 10 per cent

through in LPAC's Strategic Planning Guidance for London (LPAC, 1994). This contained a locational strategy which used Dutch 'A-B-C' policy (Sturt, 1992) to develop the sorts of policies which the GLDP had contained, as shown in table 14.

Table 14: Sustainability, Transport and Development Interaction: Locational Framework

Category A. Development proposals which generate a large number of person trips, because of the size, nature and intensity of their activities, should be located where there is high public transport accessibility and where the current or proposed public transport network has the capacity to cope with the additional trips. Parking provision would only provide for essential car trips.

Category B. development proposals which generate a more modest number of person trips could be acceptable where public transport accessibility, though still good, is complemented by the highway network which could cater for some non-essential car trips. The proportion of total person trips provided for by car could be determined by the factors identified in LPAC's Parking Advice to set parking standards for A2/B1 land uses. This approach could be extended to other land uses.

Category C. Development proposals which generate relatively few person trips could be acceptable in areas of more limited public transport accessibility, provided that the capacity of the highway network could cater for car-based trips. LPAC's Parking Advice suggests the means by which an appropriate level of parking provision could be provided. Uses within this category which would generate a large number of goods trips would be subject to other planning requirements, such as appropriate access to the Strategic Road Network and environmental considerations.

Source: LPAC, 1994, 66.

Conclusions.

This chapter has shown that, following abandonment of urban motorway plans in the 1970s, policy swung in favour of integrating land-use policy with public transport planning, particularly in the conurbations. Professional ideologies began to change and to focus on relationships between the two sectors. This took place under Heath's Conservative government and continued under Labour, so there was a degree of consensus. However, because the implementation of these strategies depended upon sizeable investments to overcome the historic shortcomings of the railway network, the onset of recession brought this initial period of policy making to an end. Subsequently, urban land-use planning became focused around regeneration and public transport considerations slipped down the agenda, although they did comprise a clearly identifiable thread within the first round of adopted structure plans. Outside the conurbations, although the development of railway closure proposals declined, the financial losses continued. Government policy towards BR continued to be dominated by the Treasury view and any major investments had to be pursued doggedly. By the end of the 1970s, there was little likelihood of any major projects being brought forward.

After 1979 there was a rapid collapse of the supportive land-use planning policy framework, with the New Right's *laissez-faire* approach to development which favoured road transport. The ideological stance to planning, local government and nationalised industries was very hostile and, in response, professional ideologies moved away from integration. It is not an over-exaggeration to say that town planning was fighting to retain some sort of coherent ideological identity during this period (Reade, 1987). However, the change in political, ideological and economic circumstances produced an unexpected combination which amounted to what became the most supportive planning policy context for rail in the whole of the post-war era.

Figure 22 summarises the thematic analysis of policy. With regard to the points developed at the end of chapter two, the railway policy agenda can be summarised as follows:

1. there was a continued search for rationalisation of the network led by concerns to limit public expenditure and this produced closure plans and general reductions in line capacity; throughout the period there was a counter thrust towards re-opening closed lines, and building new light rail systems, which was becoming stronger towards the end of the period;
2. a new generation of intercity trains was planned, but restrictions on BR's ability to invest severely limited the number of schemes for improvement of the main line network to be brought forward and there was no policy to develop French style high speed trains; in the 1980s plans were developed for second generation EMUs and DMUs
3. before the crisis of 1976 several schemes were developed for new/improved railways to close strategic gaps in the network, one new London Underground railway line was planned, and plans for the Channel Tunnel were eventually developed through to implementation; towards the end of the period light rail schemes were developed as a cheaper way of providing more accessible rail projects and plans were developed for re-opening more closed cross-city routes where these had been safeguarded;
4. plans for the improvement of existing stations and the opening of new ones became widespread, although they were particularly associated with the PTEs; this included their proposed integration with associated development and redevelopment schemes.

With regard to town planning policy the outcome was:

5. before 1979 planning policy in the major conurbations in particular was supportive of rail access, although not as prescriptive as it could have been; this was followed by a marked disregard for the overall transport impacts of development policy through the 1980s which, in turn, was replaced by the return to a more supportive regime in the conurbations and many shires in the early 1990s;
6. the redevelopment process was managed in ways which were predominantly concerned with road access, although in the PTE areas policies were developed to retrofit early peripheral developments through station building strategies and major developments were promoted at railway stations in many major towns and cities; planning policy generally disregarded freight except for certain bulk traffics; supportive national policy guidance was produced in 1970 and especially in 1994;
7. policy with regard to greenfield areas continued to be to prevent their development as far as possible and, where development was proposed, the prime transport consideration was to provide access by motor vehicles: the exceptions to this trend continued to be in the new towns.

From the above it can be concluded that the overall policy context for the relationship between the railway network and land-use patterns was strong at the beginning of the period, weak during the 1980s, but with a vigorous resurgence in the early 1990s which led to what was the most mature relationship of the whole post-war period. Ironically, this came at the same time that the Government committed themselves to rail privatisation. It seemed that the Conservatives' new leader, John Major, wished to demonstrate that he was continuing the radical policies towards State-owned enterprises of his predecessor⁴² and just as open to the advice of the Adam Smith Institute (Irvine, 1988). The late Robert Adley MP who was a Conservative friend of the railways, a frequent critique of Government policy and Chair of the Select Committee on Transport, referred to railway privatisation as a 'poll tax on wheels'. His death was untimely as his influence was such that subsequent events may have unfolded differently. Privatisation would certainly destroy the relationship between BR and local authorities and make it far more difficult to co-ordinate the public interest goals of State land-use and transport

⁴² Mrs Thatcher had favoured the creation of a track authority with companies competing to run trains on it and had sponsored research into rail privatisation, but this did not come to fruition before she left office.

planning policy with the commercial goals of a balkanised, privately owned and operated railway.

Figure 22: summary of thematic analysis of sector policy 1969-94.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
<p>Politics and political ideology</p>	<p>Initially a balance between the commercial and the social railway. Replaced after 1979 by a hard commercial stance: also support for rail projects if regenerative impacts and/or partnership basis. Dominance of Treasury view throughout.</p>	<p>Labour's vision of integrated transport embraced land use policy, but political priorities forced this down and then off the agenda. There was a strong resurgence under the Conservatives in the 1990s, as long as this could be delivered through the market and/or partnerships.</p>	<p>Priorities continued to be housing and countryside protection, with regeneration added post-1976. Some initial regard for rail in locational policy, but undermined post-1979, with a resurgence in late 1980s/1990s. Emphasis on re-opening projects.</p>
<p>Professions and professional ideology</p>	<p>Continuance of introverted culture focused on technical disciplines, although regional managers developed joint policies with PTEs. BR Chairmen generally more adept at PR. Post-1979 a market oriented culture which sought to develop joint projects/policies with local authorities and property developers</p>	<p>Limited interface between the professions in London and the PTA/PTE areas, but a decline 1976-86. Strong recovery associated with property boom and the development of the 'New Realism' and sustainability agendas in the late 1980s/1990s.</p>	<p>Design oriented ideology overridden by socio-economic concerns. Limited development of ideology around planning for access by public transport mainly through structure plans. This was eroded post-1979, but re-emerged strongly around regeneration and sustainability in late 1980s/1990s.</p>
<p>Governance and management</p>	<p>Priority to manage BR as a public corporation on business lines, minimising dependence on public funds. 1968 and 1974 Acts produced more financial transparency: rural lines at risk throughout. Post-1979 Conservatives pushed for more market oriented culture, which was responsive to/encouraged local authority/property market initiatives.</p>	<p>Value of the PTA/PTE structure as a link facilitating joint railway/land-use planning policy was demonstrated throughout. Post-1979 the combination of UDCs and planning deregulation produced hostile policies, but the partnership era was supportive. The Property Board played a positive role in triggering supportive policies and projects around stations.</p>	<p>Planning linked to the new policy agendas: the environment and then regeneration, but main transport considerations throughout continued to be around roads. Planning authorities marginalised post-1979; UDCs not rail oriented. Resurgence of planning in the 1990s as part of the sustainability debate, in a context where public/private partnership and regionalism was encouraged.</p>

CHAPTER EIGHT

OUTCOMES : 1969-94

Introduction.

The overriding feature of the period was the continuing increase in society's dependence on transport and the absolute dominance of the car and truck. Total passenger movement increased from 395 to 689 billion kilometres¹, with that by car and light van increasing from 286 to 596 billion kilometres. The total by rail (BR plus all other networks) was 35 billion kilometres in 1969 and exactly the same in 1994, having reached a nadir of 31 billion kilometres in 1982 and peaked at 41 billion kilometres in 1988. Bus and coach travel declined by 32 per cent over the period, from 63 to 43 billion kilometres, which shows that rail continued to be relatively more successful. Goods lifted by all modes increased from 1964 to 2051 million tonnes, only a 4.4 per cent increase. The total lifted by rail declined by 54 per cent, from 211 to 97 million tonnes. The picture with regard to goods moved was very different, as this reflected the fundamental changes in the geography of manufacturing and distribution which, along with the introduction of just-in-time delivery schedules, became much more transport dependent: there was a large increase of 66 per cent, from 133 to 221 billion tonne kilometres². Haulage by rail fell 35 per cent, from 20 to 13 billion tonne kilometres: so, by both freight measures, there was a very significant absolute decline in rail freight.

The relative resilience of rail passenger traffic suggests that, although the continued growth in road traffic exerted an overwhelming influence on patterns of land development, nevertheless certain things went in rail's favour. For example, it was significant that, despite accelerated urban decentralisation, over the 1975-94 period the percentage of households³ living within a seven minute walking distance of a railway station only declined from 9 per cent to 8 per cent, and the percentage living within a 7-13 minute walk remained the same at 13 per cent. This chapter will show that, towards the end of the period, the interaction between the 'tail' of the interventionist policies of the 1970s and the Conservative's market-led approach was complex and, unexpectedly, produced positive outcomes. And this despite the dominance of the Treasury view throughout, although this was the ultimate factor in deciding the fate of the network.

¹ all statistics in this paragraph are from DoT Transport Statistics 1995 edition.

² the totals for goods lifted and goods moved are quite different to those for the 1948-68 period where the biggest change was in goods lifted.

³ this data on accessibility of stations is from National Travel Surveys as quoted in Potter (1997).

The aim of this chapter is to review the outcomes of the interplay between the institutional structures, ideologies and policies of the railway and planning sectors in the 1969-94 period. Conclusions are drawn as to whether these were largely positive or negative with regard to the utilisation of the railway network. As in chapter seven, this chapter is split into two halves around 1979, and the dialogue broadly follows the same pattern of reviewing national outcomes, and then dropping down to review those in London, the provincial conurbations, and the areas outside.

The national network and main line services to 1979.

Completion of WCML electrification in 1974 led to the 401 mile Euston-Glasgow journey time being reduced by 55 minutes, to just over five hours. The introduction of HSTs in 1975 was of even wider significance as they could run on any main line, not just the WCML. They knocked 23 minutes off the London-Cardiff journey time: the railway could compete effectively with the M4 motorway. London-Newcastle came down to just over 3 hours which was better than could be achieved on the M1/A1 and, in 1978, the London-Edinburgh journey came down to 5 hours. The introduction of faster trains was accompanied by steady work to improve track quality to facilitate the higher speeds: £190 million on the ECML between 1967 and 1980 for example (Semmens, 1990, 191). Even on lines where speeds were restricted, as on the Midland main line between Sheffield and St Pancras where HSTs were introduced in 1982, there was ridership growth because of their positive image with the public. These improvements in InterCity services served to reinforce the traditional importance of CBDs as rail nodes.

Notwithstanding these improvements, the tendency towards retrenchment continued, but not as strongly as in the 1960s. Total route mileage fell by about 3550 kilometres⁴ overall, from 20,080 in 1968 to 16,528 in 1994, but with less than 1000 kilometres lost post-1981. The length of route open to passenger traffic fell from 15,242 kilometres in 1968 to a low of 14,291 in 1992, but then actually increased to 14,357 in 1994. Although the number of passenger journeys on BR declined, passenger kilometres rose from 29.6 billion in 1969 to a peak of 34.3 billion in 1988/89, but then fell back in the 1990s recession to 30.4 billion in 1993/94, still above the 1968 level. Similarly ridership on London Underground fell from 655 million journeys in 1968 to 498 million in 1982, but then grew to 815 million in 1988/89 before falling back to 728 million by 1992/93, with a slight recovery to 735 million in 1993/94. Passenger kilometres on London Underground showed a similar pattern.

⁴ all statistics in this paragraph are from DoT Transport Statistics 1994 edition

Despite the improvements there were some significant closures: even the Southern Region was not immune, with the Uckfield-Lewes line in 1969 being the most notable⁵. Also in 1969 the Carlisle-Hawick-Edinburgh 'Waverley' route was closed, despite being 98 miles long and serving an isolated population of 100,000 in the Central Borders⁶ area. By 1972 Scotland had lost 4,000 miles of the 7391 it possessed at nationalisation and other strategic lines serving remote rural areas, such as Inverness to Kyle of Lochalsh, were under threat. However, as an illustration of the growth of the pro-rail lobby, there was a successful fightback against the latter, which involved MP's, local authorities and the Highlands and Islands Development Board, as well as the wider public (Thomas,1990). A central feature of the Waverley closure case was the much lower cost of alternative bus services, but opponents questioned whether, in such a remote area, these could offer anything like a comparable service. The 'bustitution' issue grew in significance and, by the 1980s, was shown to be unsuccessful (Hillman and Whalley, 1980) and was challenged with increasing success by campaigning groups (Railway Development Society, 1988). The Waverley closure was followed in 1970 by withdrawal of passenger services between Sheffield and Manchester on the electrified Woodhead line and their concentration on the Hope Valley route: Sheffield Victoria was closed. With further loss of freight traffic associated with decline in coal consumption, the Woodhead route was closed completely in 1981, despite a spirited anti-closure campaign.

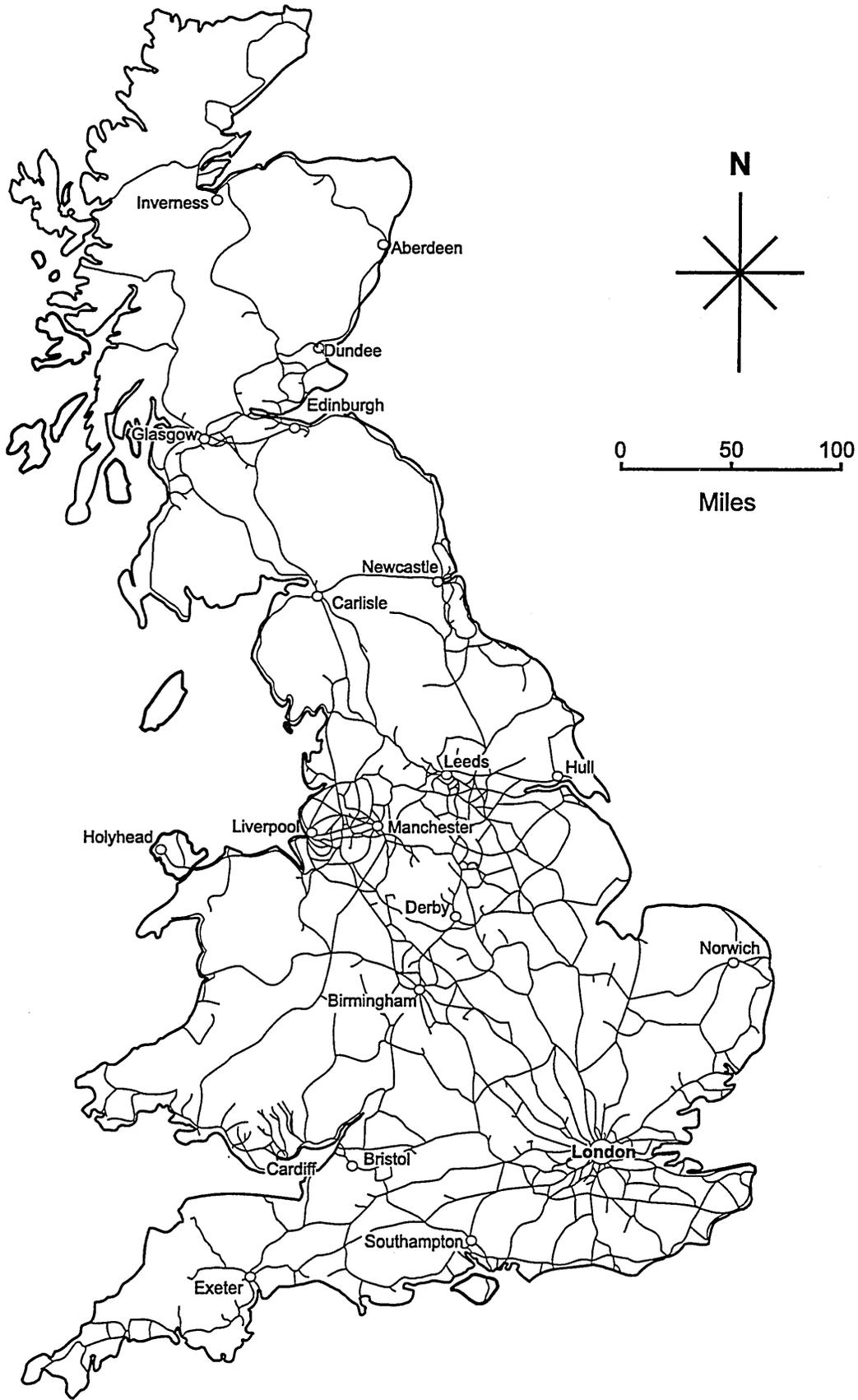
Closures continued at the rural extremities of the network: Kings Lynn-Hunstanton in 1969, Barnstaple-Ilfracombe in 1970 and Exeter-Okehampton in 1972. The latter was not even in the Beeching report and was galling for those who had opposed closure of the branch lines in north Devon and Cornwall as they had been led to believe that Okehampton would remain as a railhead. This closure, along with others such as the Waverley route, Grosmont-Pickering, Penrith-Keswick, Matlock-Chinley and Barnstaple-Ilfracombe, meant that rail access into national parks was severely eroded (see fig. 23 for a map of the network in 1985).

Whereas other secondary main lines remained open, often they were reduced to single line working, as with the Salisbury-Exeter line, and the 'Cotswold' line between Oxford-Worcester. Main line services over the former Great Western-Great Central Joint Line through High Wycombe were withdrawn by 1973, leaving only local passenger services on the line working out of Marylebone: the link through

⁵ This left no alternative route to Brighton should the main line be temporarily closed.

⁶ This was despite the presence of some of Glasgow's town expansion partners being located along the route as shown in appendix ten.

Figure 23 The Railway Network 1985



Source: Biddle, 1990.

to Banbury remained but only as single track north of Princes Risborough. Singling reduced costs but had significant effects on quality of service: a late running train would delay trains running in the opposite direction. Singling raised the threat of further reduced ridership leading to full closure and reflected the reductionist outlook within BR⁷. Even a strategic route such as the 'North and West' along the Welsh Marches between Newport-Hereford-Shrewsbury was considered for closure, although this would have meant that all services from South Wales to the north would have had to run via Birmingham.

Given that closure decisions came from central Government, it might have been expected that there would have been a national strategy for the protection of closed alignments as rights of way, for alternative forms of motorised transport or for walking and cycling. But this was not the case and it was left to local authorities to acquire disused trackbeds if they perceived a use for them, and to safeguard them through planning policies. This occurred on an ad hoc basis, although a more coherent approach was developed in some counties, such as Derbyshire. Here trackbeds were acquired for recreational use and there were policies which countenanced a potential return to rail: examples were Matlock-Chinley and the Woodhead route which were protected in the county structure plan. One of the most striking failures to protect a strategic alignment was that of the former Great Central main line between Sheffield and London⁸.

Rail freight.

Even before the introduction of Section 8 grants in 1974, the Beeching innovations were bearing fruit and bulk traffics such as coal, steel, aggregates and petroleum products were being retained. These presented few issues for the planning system as, typically, they were associated with extant industrial complexes or those, such as power stations, which enjoyed exemption from planning control. Freightliner was having some success too and was carrying more than 5,000 containers a week by 1968. When the Swansea terminal opened in 1969 it was the twenty first: others were already to be found at Stratford, Willesden and King's Cross in London, in major conurbations such as Manchester, Glasgow, Leeds, Sheffield,

⁷ In its response to a Government consultation prior to the 1977 White Paper, the BRB bemoaned the continuing disregard for the railway's wider role: '...the social and environmental objectives have never yet been defined in such a way that they could be injected into the network studies. This deficiency is still not made good...' (BRB, 1976, 10)

⁸ It should be recalled that this route was built 50 years after the other trunk routes and was constructed to a high specification as part of Watkin's aspiration for a Liverpool-Paris route. The route remained operational from Buckinghamshire southwards as part of the retained, but threatened, commuter route between Aylesbury and Marylebone.

and Birmingham, and cities such as Nottingham, Bristol and Cardiff. The provision of these terminals was straightforward as there were plenty of surplus yards which could be utilised. Freightliner was having particular success with what, in the longer term, came to be its most successful market, the deep sea maritime traffic. Ports such as Southampton and Tilbury were served, along with the new port of Felixstowe which was growing rapidly as a result of containerisation and the shift towards Europe in the pattern of trade. In parallel with these developments was the closure and, in most cases, destruction of railway infrastructure built to serve the historic ports of London, Liverpool, Manchester, Glasgow and Cardiff. Despite its successes though, Freightliner lost business to road haulage and its problems undermined the finances of the National Freight Corporation: it was transferred back to BR in 1978.

There was investment in the network for freight: in 1970 access to Felixstowe Docks was improved and a new rail link was built into Foster Yeoman's Merehead quarry in Somerset. In 1970 the BRB bemoaned the lack of progress in securing planning permissions for terminals for aggregates and similar traffic (BRB, 1970, 9), but concern over the environmental impact of the large volumes of lorry traffic which would be necessary to move bulk materials led to planning authorities including policies to encourage rail haulage in statutory plans as, for example, in the open cast coal extraction industry in Northumberland or deep coal mining in North Yorkshire. Where an operator, typically at this time the National Coal Board, did not want to apply for a rail freight grant, then planning authorities used planning conditions specifying the movement of material by rail, and even used planning agreements under section 52 of the 1971 Town and Country Planning Act which constrained lorry movements associated with the developments. The most significant example where the NCB, BR, the Departments of Energy and Environment, and local planning authorities worked together was the opening up of the Selby Coalfield. After a public inquiry this received Ministerial approval in 1975, followed by an Act of Parliament in 1978 for a new ⁹13-mile stretch of 125 mph main line to divert the ECML away from its historic alignment which would be affected by subsidence. This project was complete by 1983 and included a major rail served coal concentration facility at Gascoigne Wood, with most of the coal destined for the merry-go-round traffic to power stations.

Rail based domestic waste disposal systems involved the development by local authorities, as planning and waste authorities, of rail served waste

concentration plants and remote landfill sites. The first waste trains ran in the late 1970s from Brent in North London to the London Brick Company claypits at Stewartby. By the early 1980s another service was running from Hillingdon to Calvert¹⁰ and, by 1984, Avon County Council was using Calvert too. In 1984/85 Greater Manchester Council began running waste trains from three concentration depots in Manchester and Salford to a Wimpey owned disposal site at Appley Bridge near Wigan.

Despite these positive relationships between planning policy and rail freight, the general relationship was poor. It was typified by zoning land in development plans for new industrial and distribution facilities which were located around the motorway network with no rail connection and no potential for one. Ironically, two of the most striking examples were at the new towns of Milton Keynes and Warrington, where the excellent strategic location on the WCML was not utilised to fix the location of extensive warehousing and distribution facilities. Although some statutory development plans, such as South Yorkshire's structure plan (South Yorkshire County Council, 1978), contained policies supportive of rail freight, in practice most of these were ineffectual, given the steady decline of heavy industry and the fact that Government was content to let road haulage dominate the rest of the freight market.

Major developments, new towns and the railway network.

Across the network improvement of rail services was patchy and was most strongly associated with InterCity and commuter services in the major conurbations. It was in the major cities that there was the maximum potential for integrated land use-transportation planning. In strategic terms the continuing focus on urban containment, after the mid-1970s in association with inner city regeneration, was in the broadest sense supportive of rail. This was because of the continuing restriction of the location of retailing and commercial services to town and city centres, rather than allowing more decentralised, road oriented patterns of development. As evidenced by experience in Birmingham, there was also an awareness that road building was not going to solve local transport problems and that it was important to plan for public transport too. However, as concluded in the previous chapter, there was little evidence in contemporary structure plans that this was leading to

⁹ This was the first stretch of main line built since opening of the Great Western-Great Central joint route through High Wycombe in 1906.

¹⁰ Calvert lies to the north of Aylesbury and is a retained freight only stub of the former Great Central main line.

prescriptive, rail-oriented planning strategies and the number of major developments which were steered to rail accessible locations was limited.

Although there was no further designation of new towns in the 1970s, there was evidence of their continuing association with the rail network: stations opened at Redditch in 1972, Stevenage in 1973¹¹, Basildon in 1974 and Newton Aycliffe in 1978 (appendix ten). The Stevenage and Basildon examples showed that, even in the South East, it could take twenty-five years to deliver a station at designated new towns. By way of contrast, expanded towns such as Basingstoke already had a town centre station at designation and, in its case, a planned new retail development was complete by 1969 and there was over 1.75m square feet of offices by 1977, all reasonably accessible from the station:

The railway station is well sited to serve the town centre and the business area, and rail passengers arriving during the morning peak-hour produce a steady stream of pedestrians into these areas (Butler, 1980, 72).

There was evidence of awareness that the rail network needed to access new activity nodes, and that the location of major set-piece developments was influenced by considerations of rail access. For example, Birmingham International station was opened in 1976 to serve both the National Exhibition Centre and the adjacent airport. A large amount of car parking was provided as the peripheral location was favourable for a railhead. However, despite new stations, the overall number on the network fell from 2,750 in 1967 to 2,358 in 1977 and the station planning process continued to be poorly developed:

The location of railway passenger stations has received little attention, theoretical or practical.....

Planners have sometimes shown little appreciation of station location....

In the past at least, British Rail has also been reluctant to provide new stations to accommodate new traffic resulting from land-use change (White and Senior, 1983, 113-114).

Most of the larger new towns designated in the 1960s were expansions of existing towns, like Peterborough and Northampton, and growth led to expansion of existing town centres. Completion in 1982 of the Queensgate Centre at Peterborough (Bendixson, 1988) sensitively inserted a large shopping mall into a previously historic, but uninspiring, town centre. Although this was separated from the railway station by the new inner ring road, the characteristic outcome, this was bridged in a fairly satisfactory manner and the proximity made the walk a realistic proposition for rail users. Despite this reinforcing of the role of the main station, the expansion of Peterborough did not produce the focusing of districts around new railway stations, or the re-opening of any of the area's closed lines.

¹¹ The new station adjoined the new town centre and was accompanied by closure of the historic station.

New railway infrastructure was built at Milton Keynes as its development involved the creation of a city centre on a green field site for a target population of over 200,000: development on this scale was unprecedented. The fact that the master plan was car oriented has already been noted but, despite this, it opted for a fairly conventional city centre with a mix of medium density office developments, a major shopping mall, community services and peripheral residential development. The focal point was the mall which was the largest of its kind to be developed outside an existing city centre at the time: as a symbol of the New Right's populism, it was opened by Margaret Thatcher in 1979.

In order to take advantage of the location on the WCML a new station was planned, in association with office development, and this opened in 1982¹²: getting BR to commit itself had been a difficult task owing to its financial difficulties and the £3m cost (Bendixson and Platt, 1992). The gap between railway and town planning was reflected in the fact that BR's original view had been that Milton Keynes would be served by the existing stations at Wolverton and Bletchley. It was significant too that the shopping mall was remote from the station site, being on the opposite side of the city centre, this choice was driven by aesthetic considerations¹³. This failure to plan around access to the station occurred despite the development corporation priding itself on being a guardian of good design (Milton Keynes Development Corporation, 1992). Just to underline the weakness, the shopping mall was a huge success: it was a precursor of what was to come in the 1980s and attracted shoppers from an extremely wide catchment area. The prior closure of rail links to the east and west of Milton Keynes has already been noted: the Bedford-Bletchley service survived but was not extended to Milton Keynes, which serves to illustrate weaknesses in integrating retained rail services with planning outcomes.

Although modest in scale, the most significant (and unique) pro-rail new town development occurred at Warrington. A modest mall was built in the new suburb of Birchwood (Warrington New Town Development Corporation, 1973, 27-30¹⁴) alongside the Manchester-Liverpool railway. A new station to serve the centre and the growing eastern townships opened there in 1980 and was jointly funded by BR

¹² Birmingham International and Milton Keynes were the first major new stations on the WCML since the turn of the century

¹³ The site was the highest point of the city centre and, thereby, best able to take advantage of its location along an axis oriented on the rising and setting of the sun at the midsummer solstice

¹⁴ This document noted that BR had stated that it would be able to provide a station at this location and that talks were ongoing between BR and Merseyside and SELNEC PTEs about electrification of the Liverpool-Warrington-Manchester line although, subsequently, this did not come to pass.

(50 per cent), and the development corporation and Cheshire County Council (50 per cent).

Table 15: Shopping malls over 500,000 sq ft built post-1969 and their relationship to the railway network.

Location	Centre	Year Opened	Size (000 sq ft)	Rail Access Situation
In-Town				
Poole	Arndale	1969	631	5 minute walk from station
Luton	Arndale	1972	700	5 minute walk from station
Nottingham	Victoria Centre	1972	622	built on closed station/trackbed: remote from retained Midland station
Maidstone	Stoneborough	1976	542	5 minute walk from station
Manchester	Arndale	1976	1,189	10/15 minutes walk from Victoria/Piccadilly: direct from Metrolink post 1992
Newcastle	Eldon Square	1976	830	10 minutes walk from Central: direct from Metro post 1984
Cardiff	St. Davids	1981	581	10 minutes walk from Queen Street and Central
New Towns				
Runcorn	Shopping City	1971	600	remote from station
Telford	Shopping City	1973	650	10 minute walk from Telford Central opened 1986
Redditch	Kingfisher	1973	676	5 minutes walk from station which was rebuilt 1972
Washington	The Galleries	1977	543	no station
Milton Keynes	Central MK	1979	1,065	15 minutes uphill walk after MK Central opened in 1982
Basildon	Eastgate	1980	517	10 minutes walk from station opened in 1974
Peterborough	Queensgate	1982	650	10 minutes walk - bridges over ring road
Out-of Town				
Hendon	Brent Cross	1976	760	15 minute walk from Underground stations - hostile route under elevated North Circular road
Gateshead	Metro Centre	1986	1,630	5 minutes from new station opened under Speller amendment in 1987; not on Metro
Dudley	Merryhill	1989	1,410	not rail connected, but owners are proposing a link to the Midland Metro line as part of an expansion project
Thurrock	Lakeside	1990	1,150	not rail connected*
Sheffield	Meadowhall	1990	1,100	new station opened 1990: accessible by Supertram post-1994
Total built			15,846	

Source: Hillier Parker: British Shopping Centre Developments, various years.

Note: for centres developed in several phases, 'Size' includes all phases of development. 'Year' is that of the opening of the largest phase.

- Chafford Hundred station was opened in 1995 on the Upminster-Grays line to serve the new housing scheme and a shuttle bus operates between there and Lakeside, with a connecting footbridge opening in 2000

The BR Property Board and surplus railway land in the 1970s.

Closures led to large areas of land becoming vacant and between 1968-1973 between 6,100 and 7,000 acres were disposed of annually. By 1979 the cumulative

acreage of land disposed of since 1964 was 79,000 acres¹⁵. The Property Board's priorities meant that income generation not rail traffic generation was the prime objective. However the two did sometimes overlap, especially where property was disposed of close to an operational station. Southport was one example where, in 1973, a new shopping centre was promoted as an integral part of the station: in keeping with contemporary practice it also included 400 parking spaces. A new bus-rail interchange was opened at Bradford in 1973, but this involved closing the original Exchange station and moving to a new location, 200 metres further out of the city centre so that the site could be redeveloped for the city's Crown Courts. A similar development took place at Fort William where the old station site was required for a ring road and was closed in 1975, on the opening of a new station several hundred metres back up the line and outside the town centre ring road. Lines at Looe and St Ives were similarly cut back, with construction of new but more peripheral stations with minimal facilities. This marginalisation of stations continued the trend which had commenced in the 1960s and, although it produced revenue, it was clearly contrary to the railway's long term interests where convenient access to town centres would become of increasing importance as car ownership increased.

The continuing frictions between the Property Board and local planning authorities with regard to station redevelopment projects was illustrated at Cardiff Queen Street. Adjacent parts of the city centre had become attractive to the office market but a scheme to rebuild the station as part of a commercial development went to appeal, with a favourable result for BR in 1970. This friction caused by planning delays was mentioned in the BRB annual reports from time to time¹⁶. Although hardly objective, it is suggestive of a lack of urgency by planning authorities in facilitating schemes which had obvious merits beyond income generation for the BRB.

London and the provincial conurbations.

There were many improvements to local services in London and the major conurbations and these also reinforced the role of CBDs. In London the 1970 investment in the Southern Region was mostly for modernising signalling where the

¹⁵ The 1979 annual report (BRB, 1979, 33) estimated the total railway estate at 200,000 acres, with 170,000 acres being operational land, with much of the remainder yielding income. There remained some 1500 miles of closed branch lines awaiting disposal. Disposals since 1964 had yielded a cumulative total of £226m

¹⁶ For example, despite construction of Liverpool's Link and Loop scheme the 1979 annual report cited delays in securing planning permission for the commercial redevelopment of Central station, which was very desirable for promoting rail access as it was to be built above a new underground station. The same report mentions continuing planning delays for a hypermarket and freight terminal at Neasden, more than five years after the project was conceived.

intention was to operate the whole network from fourteen powerboxes: this brought cost savings as well as increasing capacity. Electrification of the suburban lines to Royston was completed in 1978, finally realising Howard's vision of a garden cities connected to their parent by an electric railway. Services between St Pancras and Bedford were electrified in 1982.

On the London Underground the final section of the Victoria Line opened in 1971 meaning that working class Brixton and Walthamstow had direct links to central London, as well as King's Cross/St Pancras and Euston being linked with Victoria. The Piccadilly Line extension to Heathrow was opened in 1977, just over 30 years after a rail link was first proposed by Abercrombie. In 1979 the Jubilee Line, the second of the new tube lines, was opened between Charing Cross and Baker Street, where it connected with the pre-existing Bakerloo line to Stanmore.

The Tyne and Wear Metro system was open by 1984 providing direct access to Newcastle's Central Station, the city centre, and suburban town centres such as South Shields. The system had 43 stations including 17 new ones, one of which was the expanding suburban office node of Regent Centre, an unusual development in the provinces. A monitoring study (Transport and Road Research Laboratory et al, 1986) reported that, although the Metro had had only a limited impact on development patterns, the stations were well located with regard to major areas of trip generation, and there had been a significant increase in public transport trips compared with decline elsewhere. Saturday was the peak day for Metro travel showing good integration with shopping and leisure trip destinations.

Main line railway access to Glasgow was improved by WCML electrification. By the mid-1970s the magnificence of Glasgow's Victorian heritage, typified by Central Station, was increasingly recognised. Through the GEAR project came a greater awareness of the importance of the city centre and, in this respect, GEAR's launch can be seen as the beginning of its renaissance. One of the PTE's early achievements was the re-opening in 1979 of the Argyle Line, linking Rutherglen in the south to Partick in the north via Central Low Level. Eight stations were opened, including Argyle Street and Central Low Level in the city centre: that at Partick provided interchange with the Subway. Surprisingly, given the closure of so many urban railways, the Subway survived into the 1970s before reaching a crisis: closure or renewal. The economy of inner Glasgow was undergoing sufficient structural change to question its *raison d'être* but the PTE decided on renewal. The line closed in 1977 and re-opened in 1980: ridership in the first year of operation was, at 10

million passengers, less than half that predicted¹⁷, and there was a significant cost overrun. Despite this, the PTE's cost cutting strategy of the early 1980s was successful and the Paisley-Ayr line was energised in 1987, further strengthening the links between central Glasgow and towns up to 35 miles distant.

In Liverpool the Loop and Link were completed in 1978 with new stations at Moorfields, Central and Lime Street to complement the long established St James. This work facilitated closure of two surface termini at Exchange and Central. Central's site was well located in the prime retail area and was redeveloped as a shopping centre above the new underground station, an example of integrated land-use/transportation development on a scale unusual in provincial cities.

As the public backlash against road building set in, Birmingham came to enjoy a certain notoriety for the unattractiveness of its CBD. The 1960s saw considerable office development in the peripheral Five Ways area, where the station had been closed in 1944, and the growth of car commuting to it was significant. The Inner Ring Road, with 52 pedestrian subways and the associated Bull Ring scheme, was opened in 1971. Following the concentration of local and InterCity services on New Street, Snow Hill station was closed in 1972 despite its proximity to the city centre office district, but the rail alignment through the site was protected by the City Council. It soon became apparent that road building had not solved Birmingham's traffic congestion problems: on the other hand there had been growth in ridership on the local railway network, 72 per cent on the Lichfield-New Street line between 1966-70 for example. Debate about the potential to reinvigorate railway services on the Lichfield-New Street-Longbridge route led to significant investment by the PTE in 1978. This produced new stations, including one at Five Ways, improved track layouts, a DMU service of 4 trains per hour and six in the peak, and integration with feeder bus services. Notably, this improvement did not include electrification showing the limited funds available¹⁸.

The railway renaissance in the 1980s.

Despite the hostile stance of the Conservatives towards public sector investment, the strength of BR's business case for electrification was demonstrated by improvements to the main line network. Electrification was extended from Tonbridge to Hastings in 1986, to Norwich and Cambridge in 1987, to Weymouth in 1988, and Kings Lynn in 1991. Electric services on the ECML from King's Cross to

¹⁷ The highest level of ridership was 37.3 million passengers in 1949.

¹⁸ The cross-city line gained the dubious reputation of being the most intensively operated DMU service in Europe.

Leeds, Newcastle and Edinburgh were operational by 1991. This became Britain's premier route, as the thirty year old electrification of the WCML began to show its age and cancellation of the APT¹⁹ in 1983, owing to technical difficulties and rising costs, created an investment hiatus. Paddington and St Pancras remained as the only major London termini without electrified main line services.

The beneficial impacts of Sectorisation, and the continuing ability of rail to provide competitive access to activity nodes despite the Government's policies, was demonstrated by NSE and Provincial. Between 1983 and 1989, PSO subsidy for NSE fell from £328m to £149m²⁰. Although commuting into Central London grew with the economic upturn of the late 1980s, NSE was also mindful of other markets such as travel into centres like Reading, Croydon and Milton Keynes. These experienced significant growth in commercial floorspace and some²¹ of it was located in their centres and was accessible by rail. In 1992, 19,600 commuters left Milton Keynes each workday whereas 25,000 arrived (Bendixson and Platt, 1992, 269), an interesting outcome given the wartime debate over new towns and London's railway network.

Despite the buoyancy of rail travel into London and the fact that plans had been laid decades previously to improve main line penetration, none had come to pass by the mid-1980s. But, as an example of what became a broader phenomenon, such a cross-London link was provided very cheaply by imaginative, low cost investment. This was the Thameslink scheme which was conceived in the 1960s (Calvert, 1965), but eventually came to fruition as a result of work by GLC planners, before the authority was disbanded in 1986. Opened in 1988, Thameslink utilised Snow Hill tunnel, the only cross-London tunnel built by the Victorians on the main line network, which linked Farringdon with Blackfriars²². Through passenger services had been withdrawn from this line during the First World War. Subsequently it had been used for inter-regional freight movements which declined to the point where the tunnel was closed in the 1970s. With services linking Bedford and Gatwick Airport and giving direct access to the City, Thameslink was an immediate success. BR took advantage of the property boom to remove the bridge at Ludgate Hill by burying the railway under a new office development financed by Rosehaugh Stanhope, who

¹⁹ The sinuous character of the WCML meant that it was particularly dependent on tilt to achieve higher average speeds.

²⁰ The BRB annual reports for 1987/88 and 1988/89 record consecutive record breaking years for passenger ridership, with InterCity recording a £57m profit in 1988/89, its first year as a fully commercial business. Government support had been cut by 51 per cent between 1983 and 1988/89.

²¹ Most of it was road oriented B1 office park development though.

entered into a deal with the Property Board to fund a new station too, St Paul's Thameslink (Cordner, 1990).

One of the most notable positive impacts of the creation of the NSE sector was Marylebone and the suburban lines out to the Chilterns. Previously threatened with closure, under Chris Green they received 'total route modernisation' with new signalling, new trains and station refurbishment in place by 1991, enabling the railway to serve the growing townships in the M40 corridor. Research by Headicar and Bixby (1992) showed how timely this was, and how the relaxed planning regime of the 1980s in association with road building, was leading to traffic congestion and other problems in the Chiltern corridor.

Despite investment in the network there was still plenty of evidence of the Government's parsimony towards BR²³: the most notable example was the Dornoch Bridge saga on the Scottish Far North Line²⁴ from Inverness to Wick and Thurso. Despite much effort by BR when the road bridge over the Dornoch Firth was planned, the Government refused to sanction the additional expenditure to incorporate a single line railway in the structure, which opened in 1991. The result is that the railway continues to meander around the various inlets on the coast and is 161 miles long, whereas the road mileage has been reduced to 100 miles²⁵.

Development outcomes in the 1980s.

The City of London Corporation responded to the threat posed by Canary Wharf by relaxing its strictly conservationist approach to development. Between 1988-92 nearly 2 million square metres (21million square feet) of office development was built in the City (Corporation of London, 1995) and this did produce schemes which were well integrated with the railway network. Another impact of the focus on Docklands was that it deflected attention away from more centrally located derelict areas where investment would have benefited central London's transport network as well as the specific developments concerned. For example, the King's Cross Railway Lands, which lay in an area designated in the GLDP as a 'preferred

²² This route had used the bridge over Ludgate Hill which had probably attracted even more acrimony from the aesthetic establishment than Hungerford Bridge.

²³ The 1988/89 annual report recorded a concentration of deaths from accidents in late 1988 early 1989: 35 at Clapham, 5 at Purley, and 2 at Bellgrove. These created a sombre mood and there was widespread speculation as to whether the drive for economies, resulting in excessive overtime and the creation of rationalised junctions which produced conflicting train paths requiring more staff vigilance, could be contributory factors.

²⁴ This had been proposed for closure by Beeching but was saved by a broad based 'MacPuff' campaign (Farr, 1999).

²⁵ On the other hand the collapse of the railway bridge over the River Ness at Inverness in the winter of 1989/90, did not lead to closure of the whole Far North route as it might have done: the bridge was rebuilt expeditiously

location' for offices, and was potentially one of the biggest schemes for the Property Board, was never brought to fruition. The appalling fire at King's Cross underground station in 1987 which claimed 32 lives, served to underline the air of neglect which hung over much of the Underground. Furthermore, in the King's Cross area there were, (and still are), extensive areas of non-operational railway land as well as a number of listed warehouses and other buildings: a proposal to redevelop the whole area for commercial development in association with construction of an underground Channel Tunnel rail terminal was the subject of a Parliamentary Bill promoted by BR in 1989. A scheme of this magnitude, so closely linked with rail access by Underground, suburban, InterCity and international high speed services, was a qualitative leap beyond even Broadgate (see below) and was on a par with that at Lille. But, with the focus on Docklands, the Government's unwillingness to put public money into the Channel Tunnel high speed link, and then the collapse of the property market in 1990/91, the scheme failed to get off the ground.

Although the experience in Docklands was cited as evidence of the failure of the Government's approach, at the end of the day because these developments took place in London where satisfactory access demanded rail infrastructure, they were eventually well served by rail. The quality of stations was generally excellent, both in terms of their visual appearance and the convenient access they provided to major developments. That at Canary Wharf was designed to a very high architectural specification, and provided easy access to the commercial developments it served as it was integrated into the building complex. This stood out as an example of what could have been achieved elsewhere, but the irony was that this resulted from private sector master planning in a situation where the statutory planning system was marginalised. The reason was that the market demanded rail access.

The DLR extension to Beckton, opened in 1994, running alongside the former Royal Docks. Although the collapse of the property market in 1989/90 severely delayed the redevelopment of the Royals, it is notable that this infrastructure was put in place well in advance of the market, the reverse of the Government's approach in the 1980s, which was indicative of the change towards a more planning led approach.

Investment in rail to serve new development was not the general experience in the provinces where the overall extent of urbanisation and its associated levels of road traffic congestion were less constraining. The deregulation of planning encouraged developers to submit planning applications for major out-of-centre regional shopping centres (those in excess of 100,000 square metres (1m square

feet)) with inadequate or no railway connections. Between 1982-91 there were 54 such applications: before 1987 the only example built was Brent Cross, but between 1987-92 60 per cent of retail development was out-of-centre, including several regional centres (DoE, 1994), as shown in table 15. Whereas the Tyne and Wear Metro system provided excellent access to Eldon Square, the Gateshead Metro Centre opened in 1987, was not on the Metro system although a new station was provided on the BR Newcastle-Carlisle route which adjoins the site, but this provided very inadequate access to the rest of the conurbation. In the West Midlands the Merryhill Centre at Dudley was built with no rail connections at all, as was the White Rose Centre in Leeds, Cribb's Causeway in Bristol and the Trafford Centre, Manchester, although these latter developments were not completed until after 1994.

Developments of this scale outside city centres and with poor or none existent rail services, would have been unacceptable under the planning regime of the 1970s and were symptomatic of the impact of Thatcherism on the locational utility of the railway network. The development at Meadowhall was the major exception as it was quite fortuitously located next to a railway junction, and within the territory of the South Yorkshire PTE who were interested in promoting rail access: a £7.5 million bus-rail interchange was provided and, arguably, Meadowhall became more accessible by public transport than Sheffield city centre (Donnison, 1992).

The huge growth in suburban and peri-urban office development, typified by those in the M4 corridor - Stockley Park, developments in the Reading/Bracknell area, and Aztec West at Bristol, was strongly associated with the growth of car traffic and was inaccessible by rail. Hall (in Breheny et al, 1989) considered that, although decentralisation was initially highly correlated with commuting back to London, the growth of office employment in the reception areas led to many commuters finding work nearer home. Access to this was usually by car leading to the tangle of car based journeys-to-work so common in the American urban fringe leading to the condition of what Hall, following Cervero (1986), labelled 'Suburban Gridlock'.

The accelerated rate of development experienced in Cambridge in the 1980s was a good example of a case wherein typical policies of the time collectively produced a very complex transport problem. Rationalisation of the local railway network post-Beeching had seen closure of several local branch lines, including that to the 'expanded town' of Haverhill, some 15 miles to the south east, and the route to St Ives and Huntingdon to the north west. As a historic city Cambridge was set within a green belt, but a large number of 'B1' developments were built within the city along

with requisite car parking. The housing to accommodate the additional population attracted to the area tended to be provided in small towns and villages outside the green belt owing to lack of space within Cambridge itself: the result was large growth in car commuting across the green belt and growing traffic congestion within Cambridge. Although the 1989 version of the Cambridgeshire structure plan had a transport section which contained bus policies, there were no rail policies, despite a long standing campaign by the RDS to re-open services between Cambridge and St Ives (Cambridgeshire County Council, 1989). However the policy changes of the early 1990s were in evidence in Cambridge too, and the county council began to develop ideas about congestion charging (Tomkins, 1991) and using the income generated to fund public transport projects, including a light rail system which would utilise some disused trackbeds as well as other alignments (Cambridge Traffic Planning and Liaison Select Panel, 1990).

In 1983, encouraged by the pro-developer stance of the Conservatives, ten of the country's biggest housebuilders had got together to form Consortium Developments with the aim of securing planning permission for private new settlements. These were characterised by the selection of sites not allocated for development in statutory plans²⁶ and the aim was to secure approval on appeal. Following the backlash against the proposed relaxation of green belts, these projects caused major political problems for the Government. Although few were built, they were significant in transportation terms as their motorway oriented locations and low density designs epitomised the car-oriented nature of new housing development in this period, such as the expansion of Reading at Lower Earley. Even where a new station was opened in association with private sector township, as at Beckton on the DLR or Chaffon Hundred in Essex, the layout was not manipulated to secure the maximum number of residents within easy walking distance on the Runcorn model.

The BR Property Board and surplus railway land in the 1980s.

The dominant feature of the relationship between planning authorities and the Property Board was the reclamation, typically by means of the Derelict Land Programme, of derelict railway land: the amounts justifying reclamation were reported as 6,400 hectares in 1974, 6,000 hectares in 1982, and despite continuing reclamation works, still 5,000 hectares in 1988 (DoE, 1990b)²⁷. Other planning

²⁶ The first project, Tillingham Hall in Essex, was in fact in the green belt.

²⁷ The 1982 BRB annual report noted that 86,000 acres of land had been disposed of since 1964, reducing the size of the railway estate by one third. Some 12,000 acres of railway land, 6 per cent of the estate in England and Wales, was listed on the Registers of Vacant Land. The 1985/86 annual report noted that the length of closed lines to be disposed of dropped to less than 1000 miles for the first time

involvement was with facilitating development of this land. Research by Gore (1986, 297-314) revealed that in 1985 BR had 8,119 hectares (20,050 acres) of non-operational land and that, of 8,400 miles of railway 'line' closed post-Beeching, 7385 miles (88 per cent) had been sold. In addition 36,000 hectares (89,000 acres) of 'nodal' land, ie. that formerly occupied by depots and sidings, had been disposed of. Gore looked at the types of development which had taken place on land disposed of in his South Wales case study, concluding that over a third of all sites had been used for housing, with a fifth being used for industry and warehousing, although many former 'lines' remained vacant. Unsurprisingly given the close, historic relationship between the railway network and patterns of urbanisation in South Wales, most of these redeveloped sites were within major centres of population. But significantly, like Paul's findings in Liverpool (1980), Gore found that:

Perhaps the most significant finding is the extent to which railway use has been replaced by roads and related purposes. As well as car parks, the latter includes new vehicle distribution centres...., car showrooms.... and bus garages.....in spite of the increased support given to railway passenger services via the Valleys Rail Strategy....further land-use shifts from rail to road are likely in future (1986, 312).

Local planning authorities were often resistant to the proposed uses of this land which included housing, industry, and especially retail development including supermarkets and D-I-Y stores²⁸. Because of these difficulties, the Property Board became adept at arguing that certain uses, particularly 'storage', were a continuation of the former railway use and therefore did not require planning permission with the result that:

To the general public, one of the most noticeable signs of the railway's favoured treatment is adverse; the number of former goods yards used for what at its kindest can only be called environmentally unfriendly purposes. At how many stations, still used or not, does one see in the adjoining yard an untidy scrap dealer, road haulier or builder's merchant? (Biddle, 1990, 246).

Such cases were a good illustration of how the Property Board's commercial remit worked against the needs of the operational railway because of the poor image they lent to station environs. Additionally the BRB was under great pressure from Government in the early 1980s to secure income from land disposal: the 1981 annual report stated that the emphasis on cash flow would lead to the loss of long term financial benefits: transport benefits were not even on the Government's agenda.

On the other hand the boom gave the Property Board the opportunity to develop several major schemes of great commercial value which were also relevant

since 1964. The 1989/90 annual report noted that 12,130 acres of land had been removed from the statutory Land Registers since 1980.

to rail ridership and well designed. The City Corporation was particularly willing to progress such schemes so as to reinforce the City's role as the primary office market. Schemes which gave rail an almost captive market included developments at Fenchurch Street, where the 1856 facade was retained as the frontispiece to an airspace development and, especially, the 4.2 million square feet Broadgate Centre. The latter, also by Rosehaugh Stanhope (1991), involved closure and redevelopment of Broad Street Station as well as an airspace development over part of Liverpool Street, and provided funds for refurbishment of the remaining train shed and the station concourse, producing the best quality railway interchange in the UK. Elsewhere in central London the Property Board secured development of the Plaza office and retail development at Victoria, and a particularly striking scheme by Terry Farrell and Partners at Charing Cross which projected the walkway from Hungerford Bridge into the station concourse (Architects' Journal, 1986; Haywood, 1997b). London Transport was able to work with London Boroughs in similar fashion and to secure developments over or adjacent to its stations which also provided money for station refurbishment: Gloucester Road, Kensington and the Broadway Centre at Hammersmith were notable examples.

Outside London the Property Board was involved in major station related commercial schemes at locations as widespread as Aberdeen (180,000 square feet), Welwyn (the Howard Centre - 200,000 square feet), and Reading (200,000 square feet). The financial returns were impressive, with the Property Board showing growth in income from £121 million in 1985/86 to £370 million in 1989/90, and the location of major commercial facilities at rail nodes was beneficial for ridership too.

The railway renaissance in the provincial conurbations.

Co-operation between the PTEs, Provincial, and local planning authorities produced a resurgence of integrated planning. It has been shown that, historically, the relationship between the growth of Birmingham and its railway network was weaker than in other conurbations. However, the redevelopment at New Street, the development of Birmingham International, followed by success with the Cross City line, had significantly strengthened this relationship. Subsequent events transformed the West Midlands from the third model category used in chapter seven to a combination of the first and second. The first major achievement was the re-opening of Snow Hill in 1987 as the terminus for local trains from the Leamington Spa and Stratford lines. The planning authorities had played a significant role in this as the

²⁸ This was not usually because of a desire to retain it for transport use, let alone for railway restoration, but because of 'normal' planning problems such as inadequate road access or proximity to existing none compatible uses, such as housing.

County and City Councils had protected the trackbed. The new station, although rather minimal architecturally, was developed as part of an office and car park development by the Property Board and served the growing number of office developments in the adjoining parts of the city centre. By 1989 the WMPTE had plans to extend the service westwards to Stourbridge which would provide further relief to New Street which was congested, and to open new stations, such as The Hawthorns to serve West Bromwich Albion football ground (Boynnton, 1989). The congestion at New Street had been made worse by steady improvements in medium distance services between Birmingham and destinations such as Worcester, Cardiff, Nottingham and Cambridge associated with Sprinterisation.

Overall in the West Midlands there was a mood of optimism about the local railway network and, reflecting this, the PTE changed its name to 'Centro', and developed a new corporate logo and train livery scheme: as with BR, the Government's emphasis on market forces and entrepreneurialism was having unexpected beneficial impacts on the activities of public bodies. The optimism went further: Centro proposed to develop a light rail route between Snow Hill and Wolverhampton on the trackbed of the former GWR main line which had also been protected by the planning authorities. The Cross-City line service was experiencing problems owing to worn out rolling stock and infrastructure and, in 1988, the PTE submitted an investment case to the DoT to upgrade it, including electrification. This met with the usual delays as the Department appraised the scheme and debated its rate of return, but the project was eventually approved by Cecil Parkinson in 1990 and, by 1993, the whole route between Lichfield, New Street and Redditch was energised and operational.

During this period Birmingham City Council began to develop and implement an ambitious regeneration strategy for the city centre which involved pedestrianisation, reducing the barrier effects of the orbital ring road, and promoting property led regeneration of peripheral areas. Given what has been said in this thesis about the significance of CBD activity to demand for rail travel, this was an important change from the previous strategy which had primarily focused on older industrial areas, as well as the NEC and the urban periphery. By 1991 the International Convention Centre, the Symphony Hall and the Hyatt Hotel were complete and this was followed by production of the City Centre Strategy in 1992 (Birmingham City Council, 1992) and the Planning and Urban Design Framework for the Convention Centre Quarter (Birmingham City Council, 1994). The latter facilitated the very successful Brindley Place development, and incorporated plans

for a new station adjacent to the new Indoor Arena to serve the whole of this new quarter. The combined outcome of rail improvements along with a much strengthened CBD was a very positive outcome in the face of what had been a very hostile context in the early 1980s, and demonstrated the underlying strengths of Birmingham's railway inheritance.

This resurgence, reflecting the impact of the international New Urbanism movement, was mirrored by similar developments elsewhere: Glasgow was a significant example where there was a planning-led regeneration of the Merchant's Quarter (City of Glasgow District Council Planning Department, 1992). Another favourable outcome for rail travel resulted from development of the site of the former St Enoch station, closed in 1966, which was subject to a major retail redevelopment opened in the late 1980s : its proximity to Argyle Street and Central Stations, and the Underground, facilitated rail access²⁹.

Although these regenerative activities in central Birmingham and Glasgow were beneficial for rail ridership, this outcome was largely fortuitous as the primary goal was the strengthening of the local economy, not promoting rail ridership. The underlying weakness of the overall relationship between land-use planning and rail development was highlighted by the development of the South Yorkshire Supertram. The importance to this project of securing positive impacts on the local property market has already been noted, as has the weakness of the institutional and policy contexts to deliver it. Research between 1992-96³⁰ utilising planning application as indicators of development activity around the light rail route, and which also looked at comparable data around contemporary new roads in corridors parallel to Supertram, concluded that:

....there was little evidence of South Yorkshire Supertram regenerative impactsbut that there was evidence of them clustering around the road corridor (Haywood, 1998, 38).

This research also utilised data on land-use change within an 800 metre wide corridor around the Supertram route and similarly concluded that:

There was little evidence of South Yorkshire Supertram having exerted a locational pull on the pattern of major developments in Sheffield, but there was evidence that the Lower Don Valley Link Road had exerted such a pull (Haywood, 1998, 38).

This research produced powerful evidence to show that, even where there was an explicit policy requirement to integrate land-use and rail development, the

²⁹ The Buchanan Galleries retail centre was opened in 1999 on the site of the former Buchanan Street station, also closed in 1966, adjoining the extant Queen Street high and low level stations and the Subway.

³⁰ This research went beyond the 1994 cut off date but, as Supertram was not part of the BR system, it is relevant to consider the results.

institutional and policy contexts existing in Sheffield at the time, more or less guaranteed that this would not be the outcome. The combined effect of market forces and a *laissez-faire* planning regime meant that any new development was far more likely to be drawn towards the roads (Lawless, 1999)³¹.

Given that Newcastle and Liverpool had received significant investment in their local railway networks it was not to be expected that, in the political climate of the 1980s, there would be any major projects subsequently. However, Merseyside PTE opened some new stations, with that at suburban Halewood in 1988 being the most significant as it had a 10,000 catchment within a half-mile radius (RDS, 1992, 12). Tyne and Wear PTE opened an extension of the existing Metro to Newcastle Airport in 1992. It is notable though that in both cities the designated UDAs were not readily accessible by rail, with that in Newcastle being particularly poor.

An analysis of travel-to-work trends using 1981-91 census data (Beatty and Haywood, (1997), showed that rail ridership showed only small increases, with some decreases, except in Tyne and Wear where the impact of the Metro was obvious. The 1981 figures for Merseyside show that the 1970s improvements had already had an impact.

Table 16: Percentage of resident working population using rail for travel-to-work 1981-91 in the PTE areas.

PTE	1981	1991
Greater Manchester	2.4	2.2
Merseyside*	5.1	5.2
South Yorkshire	0.5	0.8
Tyne and Wear*	1.9	6.4
West Midlands	2.1	1.9
West Yorkshire	1.0	1.5
Strathclyde		

* includes ridership classed as 'underground' in census data ie. Liverpool Loop and Link and the Tyne and Wear Metro.

Although data compatibility problems precluded analysis of rail ridership trends for the workplace populations in the PTE areas, the percentages using rail were similar to those of the resident population in 1991, ranging from 0.8 per cent in South Yorkshire to 5.4 per cent and 5.9 per cent in Merseyside and Tyne and Wear respectively. It is notable from other data sources though that the improvement of services between provincial cities through Sectorisation and Sprinterisation, coupled to the renaissance of their CBDs, did lead to increased ridership on CBD to CBD

³¹ It is also important to note that BR used the building of Supertram as a reason to close stations at Attercliffe and Brightside in the Lower Don Valley: it is very questionable as to whether Supertram provided a satisfactory alternative and these closures looked more like a continuation of the historic trend of BR withdrawing from the local travel market in Sheffield's inner area, as in many other provincial cities.

services: for example that between Manchester and Leeds was reported as increasing by 55 per cent between 1986/87 and 1991/92 (Abbott, 1992)

Railway renaissance: the 'shires'.

The strategy for the Valley Lines developed jointly by local managers in the Provincial sector and the county councils produced what has been claimed to be the best local rail service of its type in Europe: annual passenger journeys increased from 4.7 million in 1982 to reach a peak of 9.5 million in 1990/91 with 30,000 daily passengers. Historically the Valley Lines had served local towns, such as Pontypridd and Caerphilly, where stations were conveniently located for passengers travelling in from surrounding areas. However, the major asset of the network was Cardiff Queen Street station which had long provided a convenient access to the city centre and was the busiest station in Wales³². During the 1970s the Valley Lines benefited from a £0.75M improvement scheme which included works to most of the 46 stations on the network at that time: the redevelopment of Queen Street was completed in 1975³³. In the 1980s, the planning process facilitated further office development around Queen Street and the central retail area saw major investment too, including a new mall and extensive pedestrianisation. The support from the county councils and the Welsh Development Agency for station building and line re-opening produced a remarkable improvement in rail accessibility with the first new station opening at Cathays in 1983, followed by a further 15 involving the re-opening of passenger services along the Cardiff 'City' line in 1985, to Aberdare in 1988, and to Maesteg in 1993 (Railway Development Society, 1992; Davies and Clark, 1996). A novel feature of the Valleys renaissance was the use of dedicated feeder bus services which appeared in the railway timetable and provided a rail link into the wider community.

The creation of the Cardiff Bay Development Corporation (CBDC) in 1988 presented a significant transport problem as they wanted to promote the former dock area, located to the south of the city centre, for developments which would have a significant impact on passenger trip generation. There was a rail link into the dock area, the Bute Town branch, but this ran on an embankment along an alignment where CBDC wished to build a road link to the city centre. CBDC floated plans to demolish this and replace it by street running light rail which would link into the

³² Cardiff Central, on the Great Western main line, is very accessible to the city centre too.

³³ The largest of the associated office developments, Brunel House, became HQ for the Western Region. Similar offices for regional managements were opened in the 1960s and 1970s at Manchester Piccadilly, Sheffield Midland, Plymouth and East Croydon. Although convenient for railway staff, the fact that they all travelled free meant that commercially this was a questionable use of such valuable rail accessible developments.

Valleys Network, which would be partially converted to light rail on the core routes. This ambitious plan did not come to fruition and there was no significant improvement in rail services into the UDA although there was major investment in new roads (Davies and Clark, 1996, 65). This outcome in Cardiff was further evidence of the failure of the UDA mechanism, outside London, to integrate land development with local railway networks³⁴.

In Nottinghamshire the first phase of the Robin Hood project between Nottingham and Newstead opened in 1993 and the route through to Mansfield was open by early 1995; overall this involved the construction of seven new stations (Sully, 1995). Given organisational problems and rising costs associated with impending privatisation, this project stands as a remarkable monument to the strength of the relationship that was developed between Regional Railways and the local authorities, particularly the counties, and the town planning process was a significant element of this³⁵ (Haywood, 1992).

Partnerships between the shires and various BR bodies were also formed to achieve more modest goals. For example, there was one established in 1983 between Hampshire County Council, NSE, and BR's Community Unit, which worked to improve existing stations and their settings, bridges, and the linesides (Hampshire County Council et al, 1993). The visual attractiveness of the station schemes gave the railway a positive and re-assuring image, a factor which was increasingly recognised as important in facilitating ridership as BR became more 'customer aware'. Other partnerships, such as that in Devon and Cornwall, worked to promote ridership on rural lines. This was by: producing promotional material; encouraging tourist facilities to locate on or near stations; developing footpaths and cycle routes linked to stations; and including supportive policies in relevant statutory land-use plans (Regional Railways et al, 1993). This work went well beyond land-use planning and was indicative of just how sophisticated and supportive the relationship between BR and local authorities had become, based on an holistic view of what was in the the railway's best interests.

Rail freight: mixed fortunes

For the reasons discussed previously, with the additional factor that most of the national motorway network was complete by the end of the 1970s, rail freight

³⁴ Gore (1986, 323) showed that the projected investment in the Valleys Rail Strategy, £17M over five years, was very modest compared with investment in new roads in Mid and South Glamorgan in 1981-86 of £128.5 million, this being followed by construction of the Cardiff Peripheral Distributor Road at a projected cost of £165 million.

³⁵ The line subsequently opened through to Worksop in 1997 with construction of a further four new stations.

traffic continued to decline, leading to closures and disposal of land. For example, in Sheffield Tinsley Yard became redundant and the Freightliner terminal closed³⁶. This was followed by closure of nine other Freightliner terminals in 1987, including those at Edinburgh, Newcastle and Nottingham which left them, along with most other medium sized cities, with no rail freight facility at all. The rundown of the mining industry which provoked the desperate miner's strike of 1984-85, was a major threat to the coal traffic which, despite all the new business developed post-Beeching, continued to be the mainstay of the industry. Surprisingly, in the late 1980s rail haulage of coal increased as British Coal persuaded a number of major industrial concerns to switch their energy source from oil to coal and Trainload Coal was very focused in its pursuit of business. Lower cost opencast coal was increasingly attractive to British Coal and growth of this drew planning authorities into the industry: they usually demanded rail transport as a requirement of planning consent. Durham and Northumberland County Councils became particularly involved with the development of rail connected concentration and disposal points at Wardley and Haltwhistle respectively (Allen, 1990).

The 1980s property boom and, ironically, the Government's road building programme, also stimulated the rail freight market because of the demand for aggregates and Trainload Construction was well placed to take advantage of this. With the boom focused in the South East and the primary aggregate sources being in other regions, typically the Mendips and Charnwood Forest, rail haulage made good economic sense. This was also desirable from the minerals planning authorities' points of view too. This traffic was so significant as to provide sufficient incentive for one of the Mendips quarry operators, Foster Yeoman, to acquire a fleet of five locomotives to haul³⁷ their own wagons which had previously been hauled by BR locomotives. Customers often had their own wagons but to acquire locomotives was unprecedented and was held up as evidence of BR's commercialism and flexibility. ARC followed suit a few years later and Redlands also invested in a train of 'self-discharging' wagons to give greater flexibility in delivery. These investments reflected the Government's market-led minerals planning regime which recognised the need to import construction materials into the South East, and the suitability of rail for this work .

The buoyancy of traditional traffics whilst Freightliner was struggling underlined the dominance of road haulage. All modes freight tonne-kilometres increased by 27 per cent between 1980-89 but rail's market share declined. From a

³⁶ The only rail freight left in this archetypal railway age city, was a couple of spurs into steel works.

land development perspective this marginalisation was illustrated by the fact that, even where major new manufacturing complexes were developed, such as by Nissan at Sunderland and Toyota near Derby, the plants were not rail connected. This was despite their proximity to railways and BR's experience elsewhere with serving the automotive industry. The ideological context was not one where the local planning authorities felt that they should, or could, demand rail haulage to reduce the environmental impact of these developments.

The wagonload business suffered from the Sectorisation of the rail freight industry as the Sectors were reluctant to let another cost centre handle their traffic. Eventually this provoked a crisis for Speedlink and, after a review, BR abandoned the business in 1991 and more yards were declared surplus to requirements (Shannon and Rhodes, 1991). In the run up to privatisation BR was forced to rationalise its operations in order to maximise the profitability of its various businesses and this led to various 'marginal' flows being deliberately priced off the network and more customers³⁸ closed their rail links. The closure of the Ravenscraig steel plant at Motherwell in 1992, was further evidence of the decline of the traditional market. By 1995 rail freight's market share had declined to 6 per cent.

But construction of the Channel Tunnel provided an historic opportunity for rail to compete more effectively for international traffic where, theoretically at any rate, it should be able to offer faster delivery times than road at competitive rates. Prior to opening of the Tunnel, rail could only offer a limited international service using purpose-built ferries. To develop the Tunnel traffic a network of inter-modal terminals and freight villages was developed. Railfreight Distribution took the lead, but private developers and local authorities were involved too. Some of the schemes involved the intensification of the use of existing 'stand-alone' terminals such as Manchester's Trafford Park, and these did not require planning consent. But the development of terminals and freight villages at Daventry, Hams Hall and Wakefield was historic in the sense that it involved the development of land not previously used for general rail freight. They also brought with them some significant planning policy issues as they showed that commercial developers had become aware of the potential to use rail access to major industrial and distribution developments as a counter to planning policy concerns about the appropriateness of such development.

³⁷ These were operated by BR drivers.

³⁸ A significant example was the Castle cement works near Clitheroe: the cement industry had been a major BR customer for years but the traffic fell away rapidly. Smaller ports such as Boston, Goole and Kings Lynn also closed their links.

For example, Wakefield Europort was jointly promoted by Wakefield Metropolitan District Council, Railfreight Distribution, and a private company, AMEC Developments, on a site adjoining junction 31 of the M62 and an existing industrial estate. The rail terminal was only a small part of the overall 140 hectares (350 acres) of land to be developed, most of which was green belt. The project was contrary to planning policy and was evidence of a failure to incorporate these new demands within the planning process. The development was subject to a public inquiry and was only granted planning permission by the Secretary of State, John Gummer, because of the exceptional and strategic significance of the rail freight facility. The planning permission required the terminal to be built before any subsequent development of the site. A similar outcome occurred at Hams Hall, which was also a green belt site. In both cases the lasting impression was that they received planning permission despite the planning system, not as a product of it (Haywood, 1999). In fact a similar project at Toton Sidings was the subject of two planning applications which were withdrawn in 1990 and a third, submitted in 1994, was refused consent in 1995 (Greensmith and Haywood, 1999): no appeal was lodged. A further negative outcome occurred at what was the largest distribution development of the early 1990s, Magna Park off Junction 20 of the M1 near Lutterworth in Leicestershire. This was endorsed through the planning process, with no rail access, and sat uncomfortably with the county's pro-rail strategies: ironically the disused alignment of the former Great Central runs close by.

The Daventry scheme was the exception as its origins can be traced back through the planning process. Although located on what was open countryside, this was not green belt, and the strategic significance of the location was identified in supportive regional planning guidance. Subsequently the statutory local plan for the area was amended to incorporate the terminal and freight village (Daventry District Council, 1993). This preparation meant that, when the planning application was submitted, it had a relatively smooth ride: local councillors were supportive of the economic benefits and approved the scheme, which was not 'called in'.

The overall outcome of the Channel Tunnel initiative (tables 17 and 18) showed the difficulties in delivering a balanced strategy whilst depending upon the vagaries of the property market and the reactive development control process to deliver sites and funding. For example, terminals were developed very close to each other at Doncaster and Wakefield, and at Hams Hall and Daventry, whereas no new terminals and freight villages were delivered anywhere in the South East. Similarly, as shown in table 17, the exclusion of Freightliner from the process left this business

on historic and somewhat constrained sites, with that at Coatbridge being the worst example.

Table 17: BR terminals developed for the Channel Tunnel and their relationship with the nearest Freightliner terminal.

Location	Channel Tunnel traffic	Freightliner
Birmingham	Originally to be with Freightliner at Landor Street pending development of out-of-town site (this became Hams Hall - see table 8.4)	Landor Street - established city centre site.
Cardiff	To share Pengam with Freightliner	Pengam - established city centre site, now being replaced by new terminal at Wentloog.
Glasgow	Development of Mossend Euroterminal on largely greenfield site in association with industrial/warehousing development by Lanarkshire Development Agency	Terminal on cramped, established site with poor access to the motorway network a few miles to the north at Coatbridge
Liverpool	Development on existing rail site at within the port area at Seaforth - no freight village	Garston - established site
London	Development of existing Freightliner facilities at Willesden and Stratford (latter not progressed)	Barking - established site.
Manchester	New Euroterminal on BR land in Trafford Park - no freight village	Separate established site next to the Euroterminal
Wakefield	Europort - new development on green belt in association with industrial/warehousing development	Leeds (Stourton) on established site
Middlesbrough	To share Freightliner terminal - not developed as a Tunnel terminal	Freightliner continue to operate the established site

Table 18: Channel Tunnel terminals promoted by parties other than BR

Location	Developer
Daventry	Promoted by private sector on green field site in association with freight village
Doncaster	Promoted by Doncaster MBC on industrial land adjacent to longstanding BR freight facilities - no freight village
Hams Hall	Promoted by privatised electricity generator on former power station site in green belt in association with industrial/warehousing development
Toton	Promoted by private landowner in association with RfD on green belt land adjoining long established sidings area: planning permission refused, no appeal.

Conclusions

For the railway sector this period was different to the previous one as the fundamental questioning and rationalisation was over, and the balance of power in the political debate over transport constrained the Treasury view. Nevertheless, the tensions between the commercial and social railways remained, with continuous pressure from all Governments to cut costs. The overriding outcome was that, despite all the positive outcomes reviewed above, rail ridership did not change

significantly over the period, despite a large overall increase in society's mobility: rail freight fared much worse and virtually collapsed.

Although the industry remained in public hands, management structures and ideologies changed dramatically but there was, throughout, more awareness of the need to work with other public planning agencies, particularly local authorities. Initially this was with the PTAs/PTEs and the metropolitan counties, but came to include shire and district councils and their planning departments, as well as the regional planning conferences. Equally there developed an increasingly sophisticated approach to marketing the railway's services, although the impact of this became much greater after 1979. The potential benefits of this were limited as planning control over developing patterns of urban form was substantially relaxed after 1979, which placed potential customers in locations which were not easily accessible by rail. This situation was beginning to change by 1994.

The interplay between ideology, institutional structures, and policy was therefore very complex but at no time did they all fall into place in the railway sector's favour. This chapter has shown that, from 1968 to the mid-1970s, there was significant investment in railway infrastructure in some of the major conurbations, and investment in the main line network. But rail oriented ideology was poorly developed in the land-use planning system and local government re-organisation delayed development of statutory structure plans and local plans. Nevertheless, the pro-public transport ideology which underpinned transport and land-use planning ensured that many major developments, particularly office and retail schemes, were located favourably with regard to the railway network, often in association with improvement of the latter. By the time the new local government system was beginning to bed down, new planning issues had arisen which tended to push transport considerations down the agenda. Investment in railway infrastructure and the property market were curtailed, in any case, by the recession. By the early 1980s when statutory land-use plans were adopted which sought to restrict major activity generators to rail accessible nodes, the Conservatives were in power and, once the property market recovered, they had no intention of constraining road oriented urban decentralisation: they saw virtue in encouraging it in fact.

The BRB reacted remarkably well to the generally hostile stance of the Conservatives towards the industry. They adopted the strategy of placing the commercial railway closer to its customers, whilst at the same time developing a united front with other public bodies to secure as much funding and general support as possible for the commercial and social railway. However, a thread running

throughout the period was that the most rail focused planning activity was safeguarding disused trackbeds and developing re-opening strategies in partnership with BR (and the PTE where appropriate): in other words putting back what central Government had taken away. This tended to give a geographically constrained, project bias to implementation, rather than more widespread activity to maximise accessibility across an existing high quality network.

Once the Conservatives began to pull back from their extreme deregulatory stance towards land-use planning, and began to encourage rail ridership, there began what can only be called a renaissance in the rail mode and its relationships with land-use planning. This saw the policies cited above coming to fruition with re-opening of stations and lines, and the completion of development schemes which were rail accessible, including high quality schemes around stations.

A summary of the thematic analysis is shown in figure 24 and with regard to the list of points developed at the end of chapter two, the following summarises the overall outcome for the period with regard to the rail network:

1. although much reduced, the process of rationalisation continued, but there was a counter thrust which saw re-opening of closed stations and lines in major conurbations and their hinterlands, demonstrating that the process of rationalisation had been taken too far;
2. significant improvements in the main line network were made to allow faster speeds, with completion of London-Scotland electrification on both main lines, electrification of local and semi-fast services on routes outside the South East was limited; at their best the quality of passenger services improved significantly with regard to speed, comfort and frequency for intercity, regional and local services, but quality was patchy and, at the margins, cramped, squalid and unreliable. Similarly with regard to freight, core services with regard to bulk traffics were reliable and competitive, but the railway just did not try to compete for most traffic, although the advent of the Channel Tunnel brought better prospects for international intermodal services;
3. there were significant strategic improvements to the network including cross-CBD tunnelling/tunnel re-opening, LRT street running, building of new railway/light railway routes into major developments/regeneration areas, construction of one new London tube route, and opening of the Channel Tunnel;
4. although some stations were closed, the balance was heavily in favour of station openings, and there were some notable examples of major mixed use redevelopment projects in major towns and cities around stations;

The following summarises the outcome with regard to the operation of the planning system:

5. planning practice in the 1970s steered major trip generating uses to CBDs and there were some supportive developments in the new towns too which produced positive outcomes for intercity and commuter services, but this was severely undermined in the 1980s apart from special cases strongly favoured by the property market;
6. planning practice in the 1970s steered development to locations in CBDs which were accessible to stations with generally a much weaker relationship in suburban developments, but even the CBD focus was undermined in the 1980s; during the 1970s the detail of this relationship was generally poorly handled, but this was exceptionally well handled in those cases in the 1980s where development at and/or around stations was favoured by the property market; the closure and disposal of freight facilities continued throughout the period, although developments in mineral extraction and waste disposal and construction of Channel Tunnel terminals brought some engagement with the planning process;
7. planning practice throughout the period with regard to greenfield areas continued to be to prevent their development as far as possible and, where development took place, the prime transport consideration was to provide access by road: the exceptions to this trend continued to be in the new towns although the pace of development in most of them slackened considerably in the 1980s and, even where development continued, its relationship to the railway network was weaker than previously.

Figure 24: Summary of thematic analysis of outcomes: 1969-94.

Explanatory themes	Railway sector	Interrelationships between the two sectors	Planning sector
Politics and political ideology	Supportive context produced significant improvements to main line and local services to mid-1970s. Stagnation subsequently followed by Government hostility made it difficult to invest. But combination of market orientation and partnerships produced limited but significant benefits despite this.	Positive outcomes in 1970s in London, some new towns and PTA/PTE areas, followed by stagnation. Recovery in late 1980s associated with sectorisation and urban regeneration in same areas, plus some shires. Continuing emphasis in rural areas on holding on to existing services, with some supportive developments.	The supportive context delivered some relevant developments in new towns and some CBDs to mid-1970s. Stagnation subsequently, followed by flood of road oriented decentralisation in 1980s. Market oriented planning produced some relevant development, particularly in CBDs.
Professions and professional ideology	In the 1970s the continued dominance of the technical professions improved intercity and London commuter services: relationships with the PTEs influenced regional managers and delivered improved local services. Sectorisation reinforced the outward facing marketing role, which produced effective liaison with planning authorities.	A limited engagement in the 1970s which was of most significance in delivering macro co-locational outcomes in CBDs. Postive outcomes post-1979 were initially limited to locations favoured by the market, but growing liaison between the sectors developed wider benefits throughout the range of local authority areas.	Structure planning had a limited effect in restricting trip generators to CBDs, but the detail of development produced poor integration with stations. The largest and best designed pro-rail developments of the 1980s were largely market driven, although pro-rail planning ideology delivered significant re-openings and other benefits towards 1994.
Governance and management	The BR corporate period made liaison with planning authorities difficult, although the PTEs bridged the gap to a degree. Sectorisation revealed the benefits to be gained from working with the full range of planning bodies and delivered significant outcomes.	The creation of strategic local authority bodies in the 1970s helped relationships between the sectors, but by the time Sectorisation produced a more receptive BR, Government support for strategic planning had wained. The recovery towards the end of the period was delivering significant outcomes.	Many upper tier authorities pursued effective pro-rail strategies and the PTA/PTEs served as an effective bridge. Hostility to local government undermined planning's role in the 1980s, but the return to a more supportive Government attitude produced a significant recovery with notable achievements by 1994.

PART THREE

Conclusions

Chapter six showed that, although the railway and planning sectors remained in different parts of the State, several developments in institutional arrangements created the potential for more collaborative working. The most significant was the creation of the PTA/PTE structures which, despite profound changes in national politics and governance, remained extant throughout the period. The second was creation of the BR Property Board in the 1970s, and the third was creation of the Sectors in the 1980s as a reaction to the over-centralised corporatism of the 1970s. The fourth was the reinvigoration of regional planning bodies towards the end of the period. The hostility of the Thatcher Government to planning and local government had negative impacts on institutional arrangements by the creation of the UDCs and abolition of the GLC and the metropolitan counties. However, the overall situation at the moment before the onset of privatisation, was that the institutional arrangements and the organisational culture of those working within the structures, was the most supportive of collaboration between the sectors of the whole 1948-94 period.

Chapter seven showed that trends in policy towards the railways and town planning could be grouped into three broad time periods. That from 1968 to 1979 was characterised by the BRB developing policies to secure improvements in the main line railway network, whilst the PTA/PTEs developed innovative policies for the conurbations. The stance towards the rest of the network was characterised by plans for further cost cutting or closure.

Despite the shift in political and professional ideology towards planning for public transport, it took many years for supportive policies to find their way into statutory development plans. This was caused partly by local government re-organisation which was not complete until 1974, partly by the general sluggishness of the plan making process, and partly by changes in priorities arising from the onset of recession. When they finally crystallised, policies were only supportive of the railways in the most general sense in that they expressed resistance to decentralisation. The exception was where very specific policies were developed to protect disused trackbeds and station sites, typically but not exclusively, in areas where the presence of a PTE meant there was a reasonable likelihood of reinstatement.

The period from 1979 to the mid-1980s was characterised by ideological hostility towards BR and planning. Although subject to great pressure to cut costs, the BRB responded imaginatively through the development of the Sectors and a more detailed development and defence of the case for rail investment. As the

economy recovered this led to unexpected buoyancy within the railway sector and the development of ambitious investment plans characterised by those for the ECML, Network South East and the Channel Tunnel. Even the Provincial sector got the Sprinterisation plan. Although the boom created situations where the property market found it advantageous to develop proposals for rail accessible sites, encouraged by the Property Board, the role of planning policy in facilitating this was limited.

However in the third period from the late 1980s to 1994, the planning system developed a more robust stance towards the railway network. This began with fairly widespread inclusion in plans of policies for development around stations, for railway re-opening schemes and, finally, more wholehearted ideological engagement with planning around railways by development of the sustainability concept and production of the updated version of PPG13. Despite this reinvigoration of planning for rail, policy making by the BRB was curtailed after 1992 because of the Government's commitment to privatisation.

Chapter eight showed that railway outcomes in the 1968-79 period were markedly different to those in the 1948-68 period. The most notable difference was the improvement in local networks in the conurbations, particularly Newcastle, Liverpool and Glasgow. The second difference was the fall in the rate of closures and the turn towards re-openings, exemplified by Glasgow's Argyle Line. Probably the most relevant achievement of the planning system was a negative one, the fact that market pressures for decentralisation of retailing and office development were resisted and such developments continued to be steered towards city and town centres which, broadly speaking, were accessible by rail. The commercial developments in the centres of new towns, as in Peterborough and Milton Keynes, reinforced this pattern, although the detail showed the limitations of planning ideology.

The period from 1979 to the late 1980s saw few positive outcomes for the railway network and the early 1980s in particular was a bleak period. Traffic fell because of the recession, the Woodhead route was closed, the Settle and Carlisle was threatened with closure, local services in many conurbations continued to be operated by ageing DEMUs. The most notable positive outcomes were off the BR network, the completion of the Tyne and Wear Metro and construction of the Docklands Light Railway. This period was the most negative for the planning outcomes too, characterised by the relaxed attitude to massive decentralisation of retail and commercial developments to locations not accessible by rail.

From the late 1980s to 1994 the rail outcomes were more positive as the industry reaped the rewards of Sectorisation, its more robust approach to case

making, and the impacts of the growth in ridership during the boom. The most significant example of large scale development focused around new rail investment was on the Isle of Dogs around the DLR, but this was hardly 'planned' in the conventional sense, although the DLR itself was. However the market did favour commercial developments elsewhere around railway stations and local planning authorities were involved in these in the conventional way. The high quality of Broadgate, and other developments around stations in the provinces, from Aberdeen to Welwyn, were evidence of a robust community of interest between the BRB, developers and planning authorities. The effectiveness of the very specific role of planning in safeguarding disused alignments and promoting rail re-openings was exemplified by outcomes in the Valleys, Birmingham and Nottinghamshire.

Overall, part three has shown the continued and increased dominance of road transport and its associated patterns of urban form over the 1968-94 period. However, part three has also shown that the concepts of the commercial railway and the social railway were robust and, before the onset of recession and privatisation, policy around them placed the railways in their most favourable ideological context of the whole 1948-94 period. This produced positive outcomes which embraced all aspects of the passenger railway, although rail freight was marginalised. Similarly the combination of planning support for market led commercial development at or near to stations, the use of planning powers to safeguard trackbeds, along with the deeper ramifications of the sustainable city concept, meant that planning was ideologically more supportive of rail than at any time since 1948.

The analysis in part three has further demonstrated the value of the spatially hierarchical perspectives developed in parts one and two, and these are developed further below.

Outcomes at the national level for the railway sector were characterised by creation of the InterCity business. It can be concluded from previous chapters that the main line network was the priority for investment, although even this was constrained by strict fiscal criteria. Main line railway considerations were never a priority for the national land-use planning policy agenda, nevertheless certain policies had particular relevance to it, such as the general approach to decentralisation, urban containment and, in particular, policies for CBDs.

At the intra-regional, or city region level, railways provided access between suburbs, satellites, rural hinterlands and regional cities. After being neglected for twenty years, such services outside London were given champions with the creation of the PTA/PTEs, and there was a wider resurgence after creation of the Provincial sector. Throughout the period land-use planning had an impact at this level through

the specific approach taken in each city region to the balance between centralisation and decentralisation, CBD development, and the degree of commitment to planning around and developing local railway networks.

At the local level the idiosyncrasies of railway network geography and management, their interrelationship with the unique urban geography of specific localities, and the impact of local land-use planning activity on this, together impacted on the accessibility and viability of local railway networks. The after-use of redundant railway land was a particularly significant aspect of policy and practice at this level. However the general weakness of planning ideology towards the railways meant that, for the most part, the detail of the local relationship between the two sectors was poor.

These perspectives were utilised to further develop the hypotheses for the Manchester case study set out in the conclusions to part two.

The first hypothesis for the case study area was that:

the emphasis on main line investment has led to: piecemeal improvement in railway services with priority for those on trunk routes to London; removal of some services on secondary and branch lines and stagnation of others. In the most general sense planning has been supportive of the network through containment and managed decentralisation, but has not been specifically rail oriented, and there was only a loose spatial fit between patterns of development and the broad geography of the network, with evidence of significant dislocation. The overall relationship can be characterised as inconsistent, both spatially and temporally.

The second hypothesis was that:

rail access to the regional CBD has been rationalised with priority for stations associated with the trunk route to London; there have been significant improvements for access by local services after 1968 by the PTE, although this has been subject to 'queuing' mechanisms, sporadic and under-conceptualised. Although land-use planning has been broadly supportive of these investments by steering major activity generators to the CBD, proximity to stations has not been a prime consideration and urban design initiatives have not focused on the public domain around and pedestrian access to stations.

The third hypothesis was that:

at the local level there has been minimal association between the detail of suburban development and stations. There has been some provision of new stations and some examples of pro-rail trends in land-use planning, although these have been exceptional. Redundant railway land has been redeveloped predominantly for uses which do not directly stimulate demand for rail travel.

This completes part three of the thesis.

PART FOUR

Introduction.

Part four comprises the Manchester city region case study: the reasons for the selection of Manchester are set out in chapter one. The aim of the case study is to ground the analysis in a single conurbation in order to give a coherent and comprehensive perspective on the forces at work and their outcomes.

The analysis utilised the three hypotheses derived from parts two and three of the thesis which were set out at the end of part three and these were tested by specific reference to:

a broad review of policy and outcomes with regard to the development of the area's railway network and its relationship with broad patterns of urban development;

a review of rail penetration of Manchester's CBD and the degree to which planning facilitated rail access to major developments;

a study of patterns of urban growth in south Manchester and their relationship to the railway network, along with analysis of the end use of redundant railway land in the City of Manchester.

CHAPTER NINE

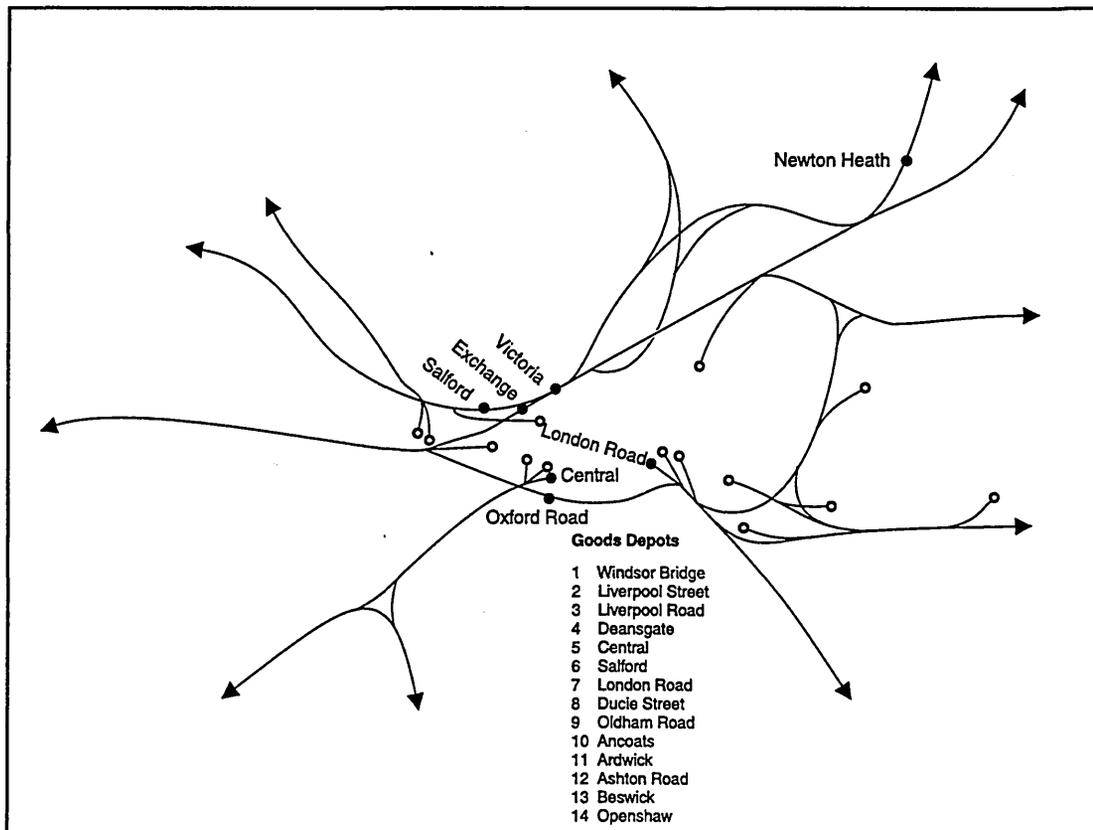
CASE STUDY: THE MANCHESTER CITY REGION

The chapter begins by briefly reviewing the history of the area's railway network, its relationship with patterns of urban development and the stance of land-use planning towards this, in order to define a benchmark to serve as a point of departure for the post-1947 analysis.

Manchester 1947: the inherited relationship between the railway network, urban form and planning

Laissez-faire produced a network wherein east-west trans-Pennine routes criss-crossed north-south routes to London (Patmore, 1964). One of the major companies, the Lancashire and Yorkshire, only served provincial markets whereas the Midland and, particularly, the London and North Western, had trunk routes to London. The Manchester Sheffield and Lincolnshire Railway started life as a trans-Pennine company but developed into the Great Central, with its main line to Marylebone. Manchester was provided with several major stations and goods facilities around the periphery of the CBD (figure 25), and there were many areas of

Figure 25: Lines, stations and goods depots around central Manchester: 1914



Source: Hall, 1995.

extensive sidings on the various approaches¹. Although the network was complex, basically it comprised two separate sub-systems, one to the north of the city and the other to the south. London Road, Oxford Road, and Central stations became the focal points of the southern network, and Victoria, Exchange and Salford became their counterparts to the north.

From the 1860s Manchester developed middle class railway suburbs, largely outside the City's administrative boundary; these included, Prestwich to the north, Heaton Moor, Wilmslow, and Alderley Edge to the south, and Urmston, Flixton, Sale and Altrincham² to the west. In response to competition from street tramways the railway companies invested in services to the outer suburbs; in 1909 the London Road-Wilmslow via Styal (the Styal line) was opened³, and in 1916 the steeply graded Victoria-Bury line was electrified. Although these brought rail access to growing suburbs, most of Manchester's inner suburbs, and certainly its most notable planned suburbs, Chorltonville and Burnage, were more readily accessible by tram (Sutcliffe, 1981).

The development of middle class suburbs was strongly related to the transformation of central Manchester from a residential and industrial area into a CBD with ample employment in various white collar jobs. The core of the CBD was most readily accessible from Exchange and Victoria stations. However the main area of grand warehouse development, which was Manchester's most distinctive contribution to Victorian architecture, lay along the Portland Street axis and was much closer to London Road 'which provided the impetus for such lavish buildings, for it was the line to Euston that brought important clients up from London..' (Parkinson-Bailey, 2000, 73)⁴

Manchester's network was largely owned by the LMS during the period of the 'Big Four'. Little rationalisation occurred and the only significant improvement was electrification of the Manchester-Altrincham line in 1931, which allowed the railway to play a continuing role in outer suburban growth along this axis. Two new stations were opened at Navigation Road and Dane Road (Knight, 1999), and on the

¹ Many of these were associated with various industrial complexes such as breweries, collieries, gas plants, steel works and engineering works, but others were 'exchange' sidings necessitated by the interfaces between the various company networks.

² Patmore (1964, 167) commented that the Manchester South Junction and Altrincham Railway opened in 1849 was: 'purely suburban in function but from its opening had an intensive passenger service and did much to develop the south-western outskirts of Manchester as a residential area'.

³ This include the opening of Mayfield as a major extension to London Road in the city centre.

⁴ In the following sections various major developments and their chronology are referred to, and unless otherwise stated, this publication is the source.

Manchester-Irlam-Liverpool line⁵ stations were also opened at Chassen Road near Flixton, and at Old Trafford (on the instigation of Manchester United). Despite recession in the cotton industry, there were further commercial developments in the core of the CBD which maintained demand for rail travel. These included major office developments along King Street such as Ship Canal House and the Midland Bank, Arkwright House in St Mary's Parsonage, and the Rylands and Kendal Milne's department stores.

Post-1919 Manchester City Council tackled its slum problem but shortage of land forced them to look outside the City boundary. They were successful in 1926 in what was then north Cheshire where they decided to build a garden city, Wythenshawe, with an intended population of over 100,000 (HMSO, 1995). However, despite this size, the peripheral location and proximity to railway lines, this was not focused around a rapid rail link to the mother city: municipal bus services to the tram terminus in south Manchester were used instead, a rather tenuous link.

As in other cities a plan to guide reconstruction was produced during the Second World War, the Nicholas plan (Nicholas, 1945). This only related to the administrative area of the City of Manchester and so could not address the strategic development of the wider conurbation. It incorporated extensive proposals for orbital roads but had little to say about integration between the railway network and outer suburban growth. However, Roy Hughes of the LMS assisted with the plan and, as a result, it recognised the need for better rail access to Wythenshawe and links across the city centre. However it rejected the idea of a connecting tunnel as too costly and proposed an elevated loop line around the periphery of the CBD with rationalisation of the city centre stations.

The important points about Manchester's railway network and its relationship with the area's urban geography which would influence the post-1947 period were:

- there was duplication of lines, stations and goods facilities;
- there was a tradition of rail served outer suburban growth, but this was overlooked in the development of Wythenshawe;
- the north and south networks were poorly linked;
- penetration of Manchester's CBD was poor;
- electrification was limited to two suburban routes;

⁵ This line was operated by the Cheshire Lines Committee (CLC), created by the Manchester Sheffield and Lincolnshire Railway, the Great Northern and the Midland. The CLC was created to break into the territory of the London and North Western: like some other 'joint lines' it remained outside the Grouping but became part of BR's London Midland Region on nationalisation (Dyckhoff, 1999).

local authority transport and land-use planning for the wider area was dominated by municipal engineers and road building.

The chapter is now moving on to test each of the hypotheses.

First hypothesis.

The emphasis on main line investment has led to: piecemeal improvement in railway services with priority for those on trunk routes to London; removal of some services on secondary and branch lines and stagnation of others. In the most general sense planning has been supportive of the network through containment and managed decentralisation, but has not been specifically rail oriented, and there was only a loose spatial fit between patterns of development and the broad geography of the network, with evidence of significant dislocation. The overall relationship can be characterised as inconsistent, both spatially and temporally.

First hypothesis: the railway network post-1947.

For most of the period the BR regional structure placed Manchester in the London Midland Region: although there was a local management presence in Manchester this was largely concerned with operating matters and the big decisions were taken in London. One of the few early strategic investments was electrification of the Manchester (London Road)-Sheffield via Woodhead route, completed in 1954. Although the rationale for this was interregional freight haulage, particularly coal, it facilitated electric haulage of express passenger services⁶, as well suburban services to Glossop and Hadfield⁷. The Modernisation Plan led to electrification of the WCML to London including the spurs to Manchester via both Crewe/Wilmslow⁸ and Stoke-on-Trent/Macclesfield with a significant reduction in journey times and growth of passenger traffic. London Road was modernised and renamed Manchester Piccadilly in 1960 and, by 1968, local electric trains worked out to Stoke and Crewe and station rebuilding took place at Cheadle Hulme, Handforth and Macclesfield. Because electrification was restricted to the London trunk routes, there were significant gaps with regard to strategic routes serving Manchester, particularly the two Manchester-Liverpool routes and Manchester-Bolton-Preston-Blackpool.

Despite the improvements to the London routes there was simultaneous rationalisation of other parts of the network. Central Station was closed, although the building was retained and subsequently listed, and the retained services diverted to

⁶ Services beyond Sheffield required a change of traction to steam haulage at Sheffield Victoria.

⁷ This was on the 1500volts DC model which was quickly rendered obsolete by the introduction of 25kv AC model for all subsequent electrification on British Railways.

⁸ The new premier electric service to London, the Manchester Pullman, stopped at Wilmslow as well as Stockport, and from this time Wilmslow can be regarded as a de facto parkway station for south Manchester/north Cheshire.

Piccadilly and Oxford Road, the latter also being rebuilt⁹. Exchange was demolished, like Central the site became a car park, and services were diverted to Victoria. Generally the network to the north of the city centre began a long period of relative decline owing, to a significant degree, to the fact that it was not part of a trunk route to London¹⁰.

Trunk route rationalisation post-Beeching brought complete closure of the Chinley-Bakewell-Matlock section of the route from Central to London (St Pancras) via Derby, and ending of passenger services on the Woodhead line to Sheffield. These significantly reduced the potential for rail access into the Peak National Park and greatly reduced the convenience of rail for journeys between the North West and the East Midlands: services to South Yorkshire and the East Midlands were concentrated on the Hope Valley line which saw minimal investment, retaining its semaphore signalling system throughout the period.

Completion of WCML electrification was largely the end of the story as far as the positive impact of national railway network policy was concerned: the most significant factors subsequently were negative. Despite the Crewe-Piccadilly-Preston route being an important diversionary route for Anglo-Scottish services, the section between Manchester and Preston was not electrified. The Woodhead route was closed completely in 1981. The introduction of the APT, which had held so much promise for accelerated services between Manchester and London, was abandoned in 1986¹¹. Without it the best that could be achieved on the WCML was a 110mph line speed. In the early 1990s plans were developed for new trains and investment in the ageing infrastructure, but were abandoned as a result of the recession and the preparation for privatisation. In 1994 the journey time to London at 2 hours 35 minutes, was slightly longer than the 2 hour 30 minutes in 1966 when electric services were first introduced.

With regard to local services, south Manchester experienced loss of railway passenger services in 1958 when those on the orbital route from Gorton/Fairfield on the Woodhead line to Manchester Central via Levenshulme and Fallowfield were withdrawn. Longsight station on the main line to London Road was closed at the same time. There were extensive proposals in the Reshaping Report for closures of

⁹ Followed in 1971 by conversion of the electric service to Altrincham to 25kv AC, the same as the WCML, which facilitated running through trains between Crewe, Piccadilly and Altrincham.

¹⁰ Although east-west rail routes were not modernised the M62 motorway made road travel quick and convenient across the Pennines to the north of Manchester.

¹¹ The long development process for the APT, culminating in failure, was in stark contrast to the rapidity with which Boeing got the 737 into service for British Airways on competing shuttle services (Modern Railways, 1982, 99)

local lines, including those out to Glossop¹², Buxton and Bury, but there was widespread and successful opposition to these. The most significant losses in the conurbation core were associated with severing of the trunk route to St Pancras: the line from Cheadle to Central via Didsbury, Chorlton and Trafford Bar, reflecting BR's withdrawal from the inner suburban market. Further out, the orbital Marple-Stockport-Altrincham-Irlam/Warrington axis and Rochdale-Bury-Bolton lines were closed too: these were parts of duplicate main lines between Manchester and Liverpool. The local railway network was paired back to its core of radial routes serving the bulk commuter flows on axes leading to central Manchester, with major investment only taking place on the back of WCML electrification. Analysis showed that 64 stations were closed in the area (table 19, figure 26), with 49 (77 per cent) as a product of complete line closures. The relative decline of the northern network was shown by the fact that it received 61 per cent (39) of the closures, and Oldham, Bury and Bolton lost much of their local networks. All the general merchandise facilities around Manchester city centre, as well as those in towns in the area, were closed, along with numerous areas of sidings. Freightliner terminals were opened on existing operational railway land at Longsight and Trafford Park¹³. By the mid-1970s Manchester Docks were running down and were eventually closed in 1985 and the internal railway network became redundant: although the Trafford Park estate experienced large job losses, such as the 10,000 that went when AEI and English Electric merged to form GEC, its internal railway network survived although much reduced.

It is notable that station closures, other than those already in the pipeline, stopped as soon as the Greater Manchester PTE (GMPTE) was created. The extent of previous closures suggests that this was largely because all those that BR was pressing for had already been made. For the future the biggest strategic issue facing GMPTE was the separation of the northern and southern networks. The first solution¹⁴ proposed was a tunnel linking suburban services previously terminating at Piccadilly and Victoria, which would pass under the core of the CBD, a scheme known as Picc-Vic. This scheme was abandoned when public expenditure was capped in the mid-1970s and strategic policy for the local network was plunged

¹² After closure of the Woodhead route local passenger services were retained to Glossop and Hadfield on the remaining stub.

¹³ Longsight was for London traffic and Trafford Park for Glasgow: owing to low traffic volumes, Longsight was closed and business was concentrated at Trafford Park.

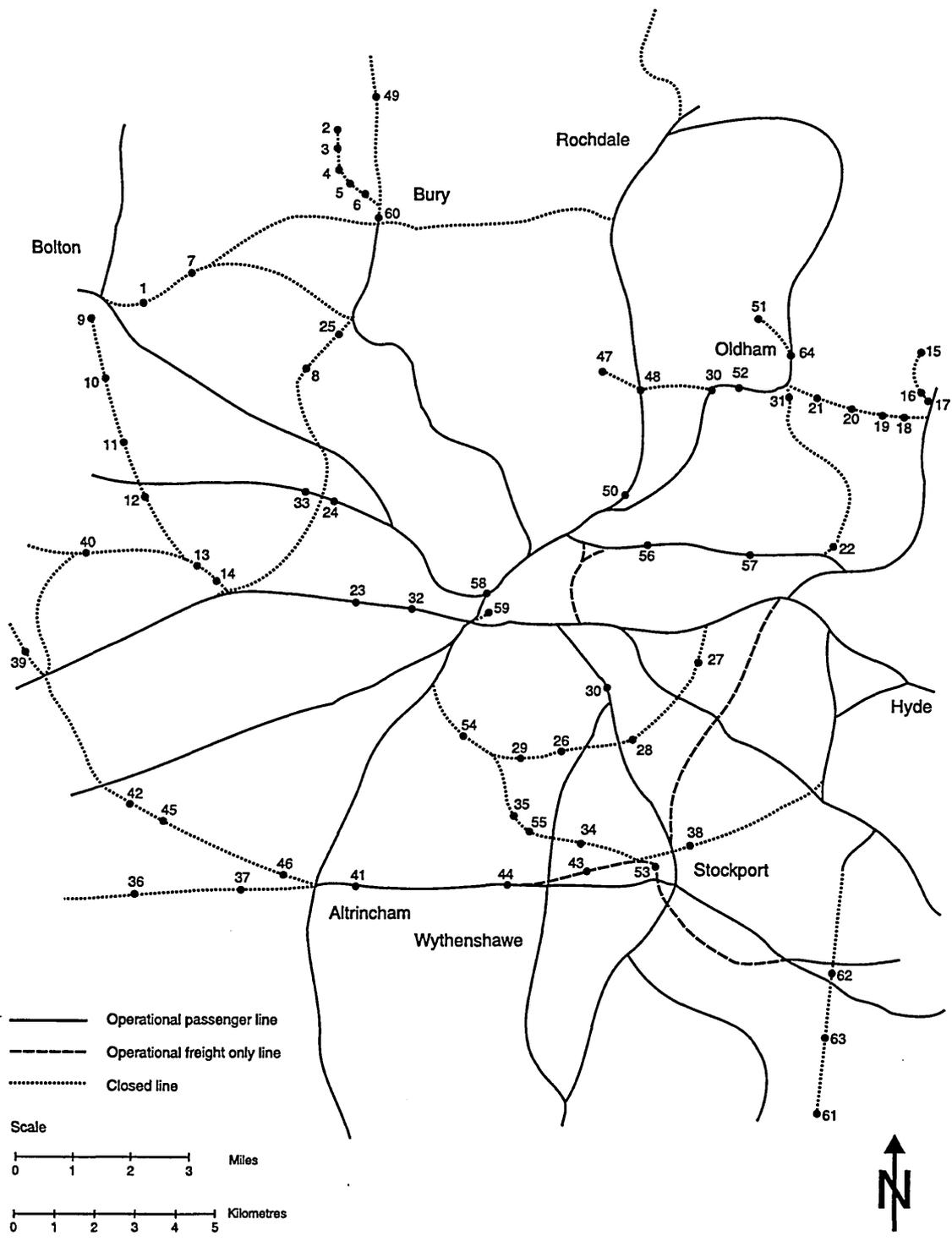
¹⁴ The development of this proposal for the heavy rail network had been delayed until 1971 whilst a feasibility study was carried out in the late 1960s for a north-south rapid transit railway (White, 1980).

Table 19: Stations closed in the Manchester area 1948-94.

No on fig. 26	Station	Route	Date of Closure
*	Barton Moss	Mcr Victoria-Liverpool	1929
*	Molyneux Brow	Bury-Clifton Jcn	1931
*	Weaste	Mcr Victoria -Liverpool	1942
1	Darcy Lever	Bolton-Bury-Rochdale	1951
2	Holcombe Brook	Holcombe Brook-Bury	1952
3	Greenmount	Holcombe Brook-Bury	1952
4	Tottington	Holcombe Brook-Bury	1952
5	Woolfold	Holcombe Brook-Bury	1952
6	Brandlesholme Road	Holcombe Brook-Bury	1952
7	Bradley Fold	Bradley Fold-Radcliffe (spur off Bolton-Bury)	1953
8	Ringley Road	Bury-Clifton Jcn	1953
9	Bolton Great Moor Street	Bolton-Worsley-Eccles	1954
10	Plodder Lane	Bolton-Worsley-Eccles	1954
11	Little Hulton	Bolton-Worsley-Eccles	1954
12	Walkden Low Level	Bolton-Worsley-Eccles	1954
13	Worsley	Bolton-Worsley-Eccles	1954
14	Monton	Bolton-Worsley-Eccles	1954
15	Delph	Moorgate-Delph	1955
16	Dobcross	Moorgate-Delph	1955
17	Moorgate	Moorgate-Delph	1955
18	Grasscroft	Greenfield-Oldham(Clegg St.)	1955
19	Grotton	Greenfield-Oldham(Clegg St.)	1955
20	Lees	Greenfield-Oldham(Clegg St.)	1955
21	Glodwick Road	Greenfield-Oldham(Clegg St.)	1955
22	Ashton-Under Lyne (Park Parade)	Guide Bridge - Oldham(Clegg St.)	1956
23	Seedley	Mcr Victoria-Liverpool	1956
24	Irlams-o'th'Heights	Mcr Victoria-Wigan	1956
25	Radcliffe Bridge	Bury-Clifton Jcn	1958
26	Fallowfield	Fairfield-Mcr Central	1958
27	Hyde Road	Fairfield-Mcr Central	1958
28	Levenshulme	Fairfield-Mcr Central	1958
29	Wilbraham Road	Fairfield-Mcr Central	1958
30	Longsight	Mcr London Road-Stockport	1958
31	Oldham (Clegg Street)	Guide Bridge - Oldham(Clegg St.)	1959
32	Cross Lane	Mcr Victoria-Liverpool	1959
33	Pendlebury	Mcr Victoria-Wigan	1960
34	Heaton Mersey	Mcr Central - Cheadle Heath	1961
35	Withington & West Didsbury	Mcr Central - Cheadle Heath	1961
36	Dunham Massey	Timperley-Warrington	1962
37	Broadheath	Timperley-Warrington	1962
38	Stockport Tiviot Dale (TD)	Stockport-Woodley	1962
39	Lowton St Marys	Wigan-Glazebrook	1964
40	Tyldesley	Wigan - Tyldesley	1964
41	Baguley	Stockport TD -Glazebrook	1964
42	Cadishead	Stockport TD -Glazebrook	1964
43	Cheadle CLC	Stockport TD -Glazebrook	1964
44	Northenden	Stockport TD -Glazebrook	1964
45	Partington	Stockport TD -Glazebrook	1964
46	West Timperley	Stockport TD -Glazebrook	1964
47	Middleton	Middleton-Middleton Jcn	1964
48	Middleton Jcn	Middleton Jcn - Oldham Werneth	1966
49	Ramsbottom	Bury-Accrington	1966
50	Newton Heath	Mcr Victoria-Rochdale	1966
51	Royton	Royton Junction-Royton (Oldham)	1966
52	Oldham Central	Mumps-Werneth-Mcr Victoria	1966
53	Cheadle Heath	Mcr Central - Cheadle Heath	1967
54	Chorlton-cum-Hardy	Mcr Central - Cheadle Heath	1967
55	Didsbury	Mcr Central - Cheadle Heath	1967
56	Clayton Bridge	Mcr Victoria-Stalybridge	1968
57	Droylsden	Mcr Victoria-Stalybridge	1968
58	Manchester Exchange	Liverpool-Mcr-Halifax-Leeds	1969
59	Manchester Central	Central - Cheadle Heath	1969
60	Bury(Knowlsey Street)	Bolton-Bury- Rochdale	1970
61	Bollington	Marple Rose Hill-Macclesfield	1970
62	High Lane	Marple Rose Hill-Macclesfield	1970
63	Higher Poynton	Marple Rose Hill-Macclesfield	1970
64	Royton Junction	Mcr Victoria-Oldham-Rochdale	1987
*	Miles Platting	Mcr Victoria-Oldham/Rochdale/&Stalybridge	1995
*	Godley East	Mcr Piccadilly-Glossop/Hadfield	1995
*	Park	Mcr Victoria-Stalybridge	1995
*	Pendleton	Mcr Victoria-Bolton	1999

* Closures which pre or post-date nationalisation Source: Daniels and Dench, 1980; Jowett, 2000; and OS maps.

Figure 26: Manchester conurbation: station and line closures 1948-94.



into crisis. As a result, the PTE's achievements were modest: the most notable were bus-rail interchanges at Bury and Altrincham. The former included a short diversion of the railway away from Bolton Street station to a new location adjoining the retail core, whereas the latter involved bus facilities in the station forecourt: Altrincham station was already conveniently located for the town centre. These schemes were

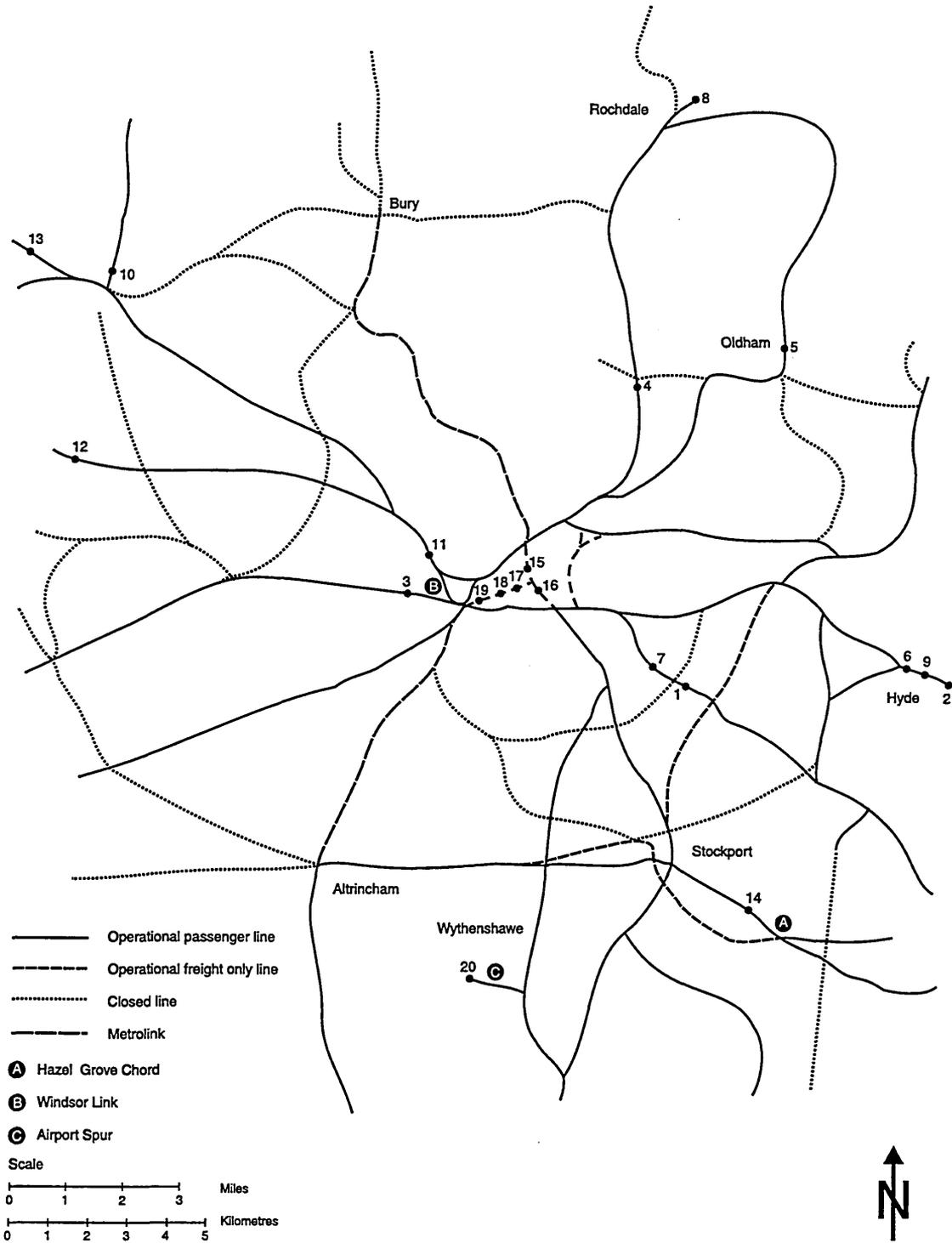
followed by the opening of 20 new stations on the existing network. These were intended to improve access to rail as they were adjacent to new housing areas, including overspill estates, as shown in table 20. Analysis shows that all the new stations, except for Manchester Airport, were for local as opposed to inter-regional or intercity services. Excluding those stations built in the city centre for Metrolink, 7 new stations were on the northern network and 8 on the southern (figure 27), showing again that the northern network was at a disadvantage, albeit slight.

Table 20: New stations in the Manchester area 1968-94.

No. on fig. 27	Location	Route	Date of opening	Comment
1	Brinnington	Piccadilly - New Mills	1977	Serving council estate
2	Hattersley	Piccadilly-Glossop	1978	Serving council estate
3	Humphrey Park	Piccadilly-Warrington	1984	Outer Manchester suburb
4	Mills Hill	Victoria-Rochdale	1985	To serve Middleton - original station closed 1964
5	Derker	Victoria-Oldham-Rochdale	1985	To replace Royton Junction
6	Flowery Field	Piccadilly-Glossop	1985	Hyde suburb
7	Ryder Brow	Piccadilly-New Mills	1985	To serve south Gorton, mostly council housing
8	Smithy Bridge	Victoria-Rochdale-Halifax	1985	Re-opening
9	Godley	Piccadilly-Glossop	1986	To replace Godley East
10	Hall i'th Wood	Victoria-Bolton-Blackburn	1986	Bolton suburb
11	Salford Crescent	Piccadilly/Victoria-Bolton/Wigan	1987	In association with concentration of E-W services on Piccadilly
12	Hag Fold	Victoria-Wigan	1987	To serve Atherton
13	Lostock Parkway	Piccadilly/Victoria-Preston	1988	To serve Bolton suburbs
14	Woodsmoor	Piccadilly-Hazel Grove	1990	Stockport suburb
15	Market Street	Bury-Manchester-Altrincham	1992	Metrolink-Manchester city centre
16	Piccadilly Gardens	Bury-Manchester-Altrincham	1992	Metrolink-Manchester city centre
17	Mosley Street	Bury-Manchester-Altrincham	1992	Metrolink-Manchester city centre
18	St Peter's Square	Bury-Manchester-Altrincham	1992	Metrolink-Manchester city centre
19	GMEX	Bury-Manchester-Altrincham	1992	Metrolink-Manchester city centre
20	Manchester Airport	Piccadilly-Airport	1993	In association with new line to serve airport

Source: (Hall, 1995; Railway Development Society, 1992, 1994).

Figure 27: Manchester conurbation: new stations and lines 1968-94.



Despite the hostility of Thatcherism there were some significant, though modest, improvements to the local network as a result of promotion by the PTE. In 1986 the Hazel Grove Chord was opened to the south of Stockport allowing Sheffield-Manchester-Liverpool trains to run via Stockport, which was important to the latter's development as a rail hub. In 1988 the Windsor Link was opened connecting the north and south networks and facilitating concentration of trans-

Pennine and local services on Piccadilly: Salford Crescent station was opened to facilitate interchange, but although this was well located for Salford University it did not improve access to Salford Precinct¹⁵ as this was remote from the network. Concentration of services on Piccadilly reinforced its role as Manchester's principal station, but also facilitated downsizing at Victoria which could release land for development.

A significant example of commitment to the network was the opening, in 1993, of a spur to Manchester International Airport (MIA), which was thereby accessible from Liverpool, Preston, Blackpool, and Huddersfield, Leeds, York and Sheffield. This was not accessible to trains from the Crewe direction, but a chord opened in late 1995¹⁶ facilitated this. Although more concerned with medium and long-distance than local traffic, the airport link was successful but has already experienced capacity problems, as well as being criticised for poor links with the areas to the west in Cheshire and North Wales, demonstrating the inability of the agencies involved to plan sufficiently expansively because of the difficulties involved in securing funding.

The impact of Sectorisation was positive with regard to interregional services: its focus on CBD-to-CBD routes, especially Liverpool-Manchester-Leeds--Newcastle, was very beneficial with increases in service frequency as a result of Sprinterisation which produced increases in ridership (Modern Railways, 1993): it is notable though that this very important route¹⁷ was not electrified although, like Manchester-Preston-Blackpool, this was mooted on many occasions but always turned down owing to the Treasury inspired investment criteria.

The impact of Sectorisation on local services was muted; for example, routes serving Victoria, typified by the Manchester-Oldham-Rochdale service, became very basic railways using rail buses and unstaffed stations. The area did not experience the reopening of closed routes.

The abandonment of Picc-Vic had left two significant problems with regard to the local network: poor penetration of the regional CBD and the need to modernise the area's most significant commuter routes - those to Altrincham and Bury. These

¹⁵ This was a Salford City Council promoted development at the heart of a large housing CDA.

¹⁶ As an illustration of the difficulties in securing funding for rail projects, BR was a sponsor of the first link but not the second, whereas Manchester Airport funded the second but not the first: only GMPTE was involved in both showing the significance of the PTE role.

¹⁷ Known as 'North Trans-Pennine' it is the most important trans-Pennine route – with the benefit of hindsight it can be seen that the BTC electrified the wrong route in the early 1950s.

were converted into Metrolink¹⁸, light rail lines connected by a short street running section across the city centre providing an imaginative, though partial, solution to the penetration problem and the separation of the north and south networks. It is notable that this came 20 years after the PTE was created, with Metrolink becoming operational in 1992. Outside the city centre the tram stops were former railway stations and were generally well located with regard to journey patterns because of the historic role of the commuter lines. However, no funds were available for station rebuilding, only for the installation of lifts to provide easier access for disabled people, and this forced the system to utilise high-floor trams which necessitated construction of intrusive platforms in the city centre. At the time of its inception the line was seen as part of a wider network which would involve further conversions of parts of the heavy rail network, as well as new alignments, but none were committed before 1994¹⁹.

First hypothesis: town planning policy post-1947.

Housing renewal and associated land supply issues were the most significant strategic planning problems in the early post-war period. Initially, Manchester's favoured policy was dispersal to new towns in north Cheshire and south east Lancashire: Mobberley, Lymm, Risley, Westhoughton and Winsford were considered but rejected, largely as a result of resistance by the county councils (Hall et al, 1973a, Robson, 1980). The institutional arrangements for planning, whereby the areas administered by Cheshire and Lancashire County Councils extended deep into the conurbation, mitigated against a strategic approach and central Government did not intervene: the national priorities were London, Glasgow and the Durham coalfield. In the 1950s and early 1960s the exporting local authorities, mainly Manchester and Salford, therefore had to utilise overspill estates on whatever sites they could persuade their neighbouring authorities to accept, which undermined consideration of transport links. The resistance by the county councils was reinforced by their development of draft green belts, the effectiveness of which was not undermined by the fact that it took many years for them to become formally adopted, 1984 in the case of Greater Manchester (GMC, 1984).

¹⁸ GMPTE worked Metrolink into a firm proposal in 1983 and won funding in 1989: the delay was caused by the DoT considering Metrolink's impact on bus deregulation and by introduction of new assumptions to underpin the section 56 funding mechanism as described previously.

¹⁹ The first extension, to Eccles via Salford Quays, did not open until 1999 and was funded largely from the £77 million premium obtained from refranchising Phase 1 with the Phase 2 (Eccles extension) contract. About £25 million of the £42 million receipt from privatising Greater Manchester Buses was also invested in phase 2.

As a result, dispersal was largely to overspill estates where between 1955 and 1973 the biggest exporter, Manchester, built approximately 22,000 council houses (Manchester City Planning Department, 1981). Most of these were in locations with poor access to the rail network or, even where they were in a settlement that nominally enjoyed a railway service, such as Wilmslow or Knutsford, they were located on the periphery well away from the nearest station. At this time even where estates were alongside the railway, no thought was given to opening a new one. Many sites within the city were redeveloped, but rail access was not a consideration for these either. A prime example was the redevelopment of huge sites previously occupied by the BR owned Gorton Works and Beyer Peacocks: although within walking distance of Gorton station these were developed by the City Council for non-housing purposes.

With the growth of the private housing market, suburbs developed outside the draft green belts, primarily in the south east in areas like Macclesfield, Wilmslow, and Knutsford, but also in the northern outskirts of Bolton and Bury (Robson, 1980). They were associated with car commuting and the development of the regional trunk road network. As part of the latter the City of Manchester Development Plan²⁰ contained extensive proposals for road building within the city derived from the Nicholas Plan, exemplified by completion in 1966 of the Mancunian Way which was intended to become the inner of three rings. Although these plans were scaled back, the outer orbital M62 and M63, and the radial M56 were open by the early 1970s. The general lack of policy towards the railway network was illustrated by the fact that Manchester's Development Plan contained only one reference to it;

Railways.

No proposals are envisaged by the British Railways involving changes in land use and the Development Plan is based on the retention of railway facilities in their present form (City of Manchester, 1961, 14).

The difficulties in securing a new town to take decentralisation from Manchester were eventually overcome when Warrington was designated in 1968: this had existing stations on the Manchester-Liverpool railway and the WCML, and an additional station was opened at Birchwood as outlined in chapter 8.

As well as closure of BR's general merchandise facilities, the national decline in rail freight was exemplified by East Manchester, an archetypal nineteenth century rail served industrial area. The 1960s saw the end of locomotive building with closure of Gorton Works and Beyer-Peacock's, along with closure of Bradford Colliery.

²⁰ This was belatedly approved by the Minister of Housing and Local Government in 1961 after submission in 1951.

These were followed in the early 1970s by closure of the rail served English Steel works²¹, Bradford Gas Works and Stuart Street Power station. Regeneration of the area came to be seen as dependent on significant improvements to the strategic road network, improvements to which had been already made as outlined above (Manchester City Planning Department, 1983). The planning system allocated sites for industry in East Manchester, but rail access was not sought by developers or BR, and was not incorporated into the redevelopment process.

But there were more favourable outcomes for freight elsewhere. These included development of waste compaction and rail loading facilities at Northenden, Brindle Heath and Dean Lane, the retention of several stone terminals, the rehabilitation of the lines into Trafford Park by Trafford Park Development Corporation (TPDC) which included an important link to the Cerestar plant and, in the 1990s, development of the Euroterminal. The latter was permitted development²² and, generally, the role of the planning system in the provision of these freight facilities was reactive.

By the mid-1960s more new jobs were being created in the service sector in association with commercial redevelopment schemes, than in industry. The outcome in Manchester was that the city centre and certain suburban centres, came to be seen by the market as attractive locations for office development and this was encouraged by local planning policy. Outside central Manchester demand for office space was strongest to the south and south west of the city and planning policy steered development to locations such as Trafford Bar, the biggest concentration, situated alongside the Manchester-Altrincham railway. Other concentrations were in or near suburban town centres: these included Sale and Atrincham with 88,255 square metres (950,000 square feet) and Stockport, where more than 74,000 square metres (800,000 square feet) was built between 1965-76, including a minor node adjacent to Cheadle Hulme station, a long standing source of commuter traffic. Further out Wilmslow developed into a successful office location where rents rivalled those in central Manchester and all the developments were in the town centre and

²¹ Following abandonment of high rise and overspill, Manchester City Council launched a search for 1000 housing sites within the city in the early 1970s which led to some controversial developments. Openshaw Village on the site of the former English Steel works was one such site: it was isolated, inaccessible by public transport, and adjacent to noxious industrial premises. This development reinforced the missed opportunities to provide housing on more accessible sites such as those in Gorton mentioned previously.

²² To underline subsequent controversy around the extent of permitted development rights enjoyed by the railway industry (Greensmith and Haywood, 1999), the operation of this terminal, which included night time working, triggered complaints from local residents and Trafford MBC environmental services department demanded the installation of noise attenuation measures.

accessible by rail. Several suburban town centres also saw significant redevelopment of their retail areas: Stockport, Sale, Bolton and Altrincham were the most notable: disposals by BR in the 1960s produced small retail developments close to stations at Urmston and Alderley Edge. Undoubtedly office decentralisation and town centre redevelopment was strongly associated with use of the car, nevertheless the suburban centres were generally well located with regard to access by rail and this facilitated utilisation of local services in particular.

By the late 1970s the Greater Manchester Council (GMC) had produced their Structure Plan which had four major themes; 'urban concentration, redirection to the inner core, maintenance of the regional centre, resource and amenity conservation' (GMC, 1982, 1). The stance towards commercial development was typified by office policy: 'Office developments will normally be expected to locate in or adjacent to town centres or in Trafford Bar office centre' (GMC, 1986, 4²³). The resistance to the decentralisation of such trip generating uses was, in the broadest sense, supportive of the railway network.

The Manchester-Salford Inner City Partnership was created in 1978 and the initial strategies were focused on housing schemes, community projects, industrial developments and the environment, particularly the reclamation of derelict land. Whereas there was an awareness that the regional centre was of crucial importance to the well-being of inner city residents (Manchester City Council, et al 1983), it took a while for this to crystallise into a city centre strategy as such. When this occurred a significant feature which was seen as essential to competition with suburban town centres, but which was inimical to the utilisation of the railway network, was the promotion of short stay car parking. An 8 per cent increase was reported in 1985 (Manchester City Council, 1986, as cited in Healey et al, 1988). It was recognised that there was a need to improve the railway network's penetration of the city centre, but;

The fact that the railway network converges on termini on opposite sides of the City Centre coupled with the relative scarcity of stations in the Inner Area means that the railway is little used by Inner Area residents. However the County Council are considering proposals for linking together the two networks and converting some existing railway lines to a light rapid transit system. This will increase frequencies and may involve a greater number of Inner Area stations. All these factors should increase the attractiveness of the network to inner area residents(Manchester City Council et al, 1983, 49)

Manchester City Council was hostile to the Thatcher Government but Salford was more pragmatic and lobbied for EZ status for 370 acres of the derelict docks area, which was granted in 1981: the Council took the lead in developing a market

²³ This was the final version of the structure plan produced just before abolition of the GMC.

oriented planning and regeneration strategy for the area, branded as Salford Quays. The Conservative controlled Trafford Council similarly lobbied for EZ status for the declining Trafford Park industrial estate which was also granted in 1981: in 1987 regeneration of the area was handed over to the TPDC.

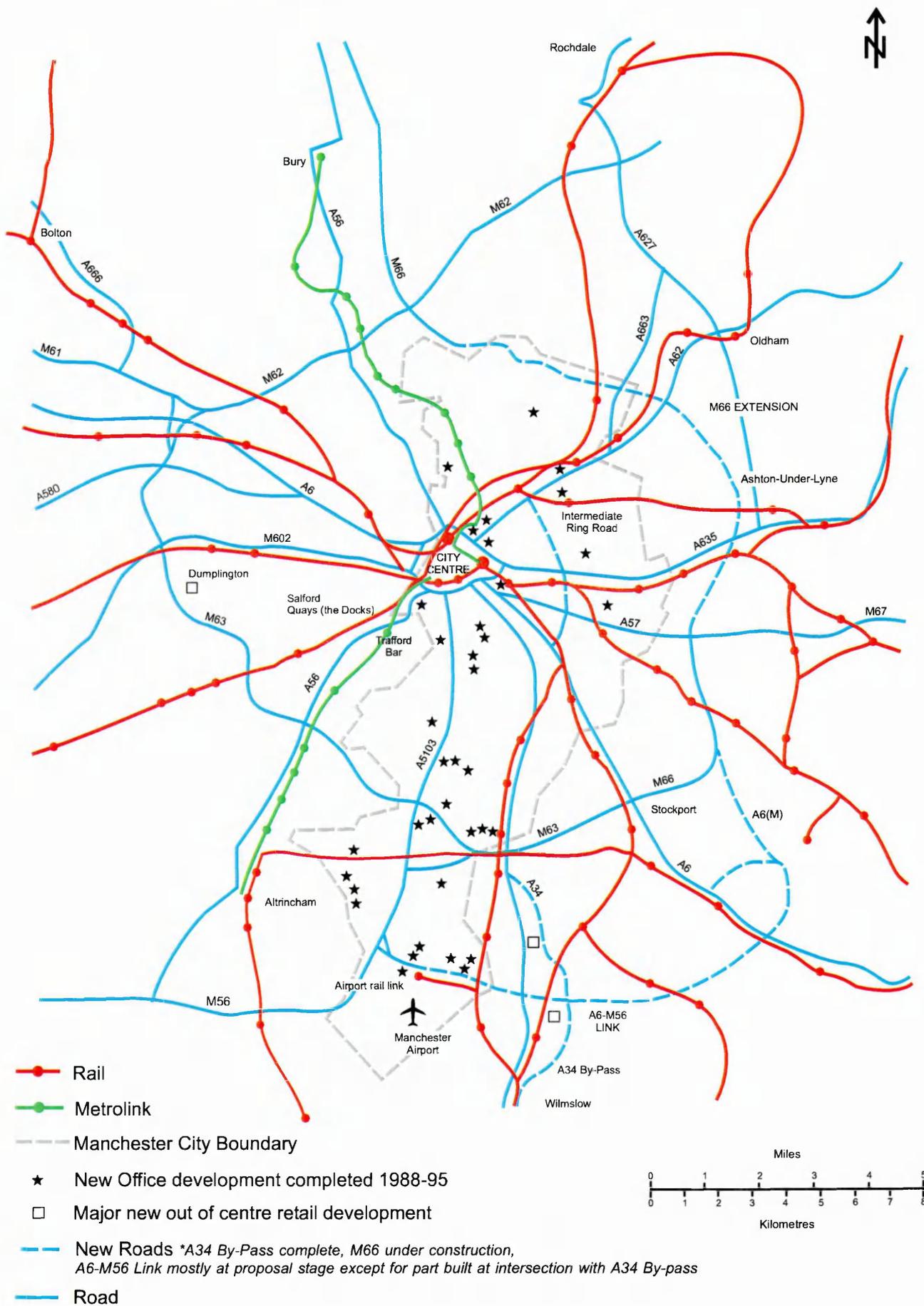
Despite the various initiatives, employment in inner Manchester declined by 6 per cent between 1984-91 (DoE, 1996, 44) whereas there was a 41 per cent increase in outer Manchester, and between 1981-96 there was a 62 per cent decrease in manufacturing jobs in the city, a 7 per cent decrease in public services and a 2 per cent decline in private services (Power and Mumford, 1999). These trends were suggestive of a continuing weakening of demand for traditional radial rail commuter services. The impact of Thatcherism was significant with abandonment of the restraint on office decentralisation being a prime example²⁴. Research published during the PhD process (Haywood, 1996) showed that deregulation of planning control influenced the location of office developments and that the total floorspace built outside the city centre during the 1989-1991 boom, was considerably greater than that within it. The locations outside the city centre were suburban, free standing and poorly located for rail access (fig. 28). Even where they were reasonably close, such as around the Airport rail link, the details discouraged rail access: although an excellent station was built to serve the airport there was no Docklands style vision of a high density, rail served development node.

Even at Salford Quays, where there was no prior passenger rail access, none was built despite the area being developed as a major office node containing over 185,000 square metres of floorspace (Law and Dundon-Smith, 1994), in association with housing and leisure uses. This failure to integrate the development of such a major growth pole with the local rail network was typical of the 1980s approach outside London as, in the absence of a transit oriented planning vision, the property market was car oriented: multi-storey car parks were built to serve the development.

In the wider conurbation, despite the shifts in national planning policy in the 1990s, the long lead time of major developments meant that several schemes which contravened the new policies were completed after the changes, or were still in the pipeline in 1994. The major out-of-centre shopping schemes alongside the A34 by-pass were notable examples: although relatively close to Handforth station

²⁴ An early indicator of the new policy context for office development was the movement in 1985 of the Refuge Assurance company from their Edwardian purpose built premises adjacent to Oxford Road station to new purpose built premises in the green belt to the south of Wilmslow on a site not within walking distance of Wilmslow station.

Figure 28: Manchester Conurbation: the location of major developments with regard to strategic transport routes 1988-94



on the Manchester-Crewe line they were not readily accessible from it and were wholly focused on the new road which they partially funded through planning gain (Haywood, 1997). To the west of Manchester, the new regional shopping centre at Dimplington²⁵, comprising approximately 93,500 square metres with 10,000 parking spaces, was supported by central Government in a complex legal battle²⁶ going to the House of Lords in 1995 (EGi Legal, 1995), despite it contravening the new policies and being fiercely resisted by local planning authorities in Greater Manchester: it is not accessible to the rail network. The retail and leisure developments on the former railway land adjoining Stockport station were one of the few examples of rail accessible major developments built in the conurbation in the 1980s, although even the detail of this detracted from the accessibility of the station and the station itself received no investment

Hypothesis one: conclusions.

The evidence shows the hypothesis to be proven. There was a significant difference of experience between the northern and southern networks and it was the latter, focused Piccadilly and the WCML, which received most investment. In particular there was only one closure on the retained radial routes to Oxford Road/Piccadilly (Longsight) and that predated electrification. By managing decentralisation, planning policy was broadly supportive of passenger rail use, particularly during the 1960s and 1970s, but not specifically rail oriented. There was evidence of significant dislocation in the early years with regard to the location of overspill, and especially in the later period as a result of Thatcherite *laissez-faire*. The overall relationship between land-use planning and Manchester's network can be characterised as partial and inconsistent.

Second hypothesis.

Rail access to the regional CBD has been rationalised with priority for stations associated with the trunk route to London; there have been significant improvements for access by local services after 1968 by the PTE, although this has been subject to 'queuing' mechanisms, sporadic and under-conceptualised. Although land-use planning has been broadly supportive of these investments by steering major activity generators to the CBD, proximity to stations has not been a

²⁵ Renamed the Trafford Centre, this scheme opened in late 1998.

²⁶ The original outline planning permission was granted by the Secretary of State in 1986 but this was followed by two public inquiries, the second one focused on concerns over traffic congestion on the adjacent M63 motorway. The basis of the submission to the House of Lords by the opposing local authorities was that the Secretary of State had ignored changes in retail policy and was perverse: the Secretary of State's decision was upheld and full planning permission granted.

prime consideration and urban design initiatives have not focused on the public domain around, and pedestrian access to, stations.

Second hypothesis: rail access and access to rail in central Manchester

It has been shown that Manchester inherited a major problem with regard to rail access to the CBD. Despite the Nicholas plan there was no improvement before 1968, although main line and local services into Piccadilly were significantly improved. Closure of Central removed what was arguably the best placed station for city centre access, although retention of Piccadilly, Oxford Road, Deansgate, Victoria and Salford left stations at significant, if peripheral, locations.

The general vitality of Manchester's CBD and the encouragement of commercial redevelopment by the City Council through the use of the CDA mechanism, was exemplified by completion of the CIS building in Miller Street in 1962, which was very accessible to Victoria. The even bigger Piccadilly Plaza scheme, completed in 1965, was on a war damaged site and was also the subject of a CDA plan, along with other office development sites on nearby Portland Street. London Road station was within 400 metres of Piccadilly and it is instructive that BR chose that name to rebrand the station in the modernisation process. In 1961 the BTC completed the development of Rail House, a ten-storey office building adjoining Piccadilly. Other large office developments were completed in the vicinity of the station suggesting that modernisation and initiatives by BR had served to boost the market in this part of the CBD and the planning process had facilitated this: the seven-storey Gateway House on the site of the former LNWR goods depot on the station approach was the most notable scheme, completed in 1969.

Following publication of the Buchanan Report the encouragement of large, multi-storey, mixed-use redevelopment schemes impacted in Manchester with the working up of the Arndale redevelopment through a CDA based partnership between the City Council and Town and City Properties. Although not completed until the mid-1970s this 100,000 square metres (1.2million square feet) development, and the adjoining Market Place scheme, served to reinforce the attractiveness of the city centre in the face of intense competition from suburban centres. The late 1970s also saw pedestrianisation of Market Street and St Anne's Square which linked with these precinct developments. Other significant office developments were completed in the early 1970s, mainly in the financial core around King Street, an area known as the 'square half mile'. To the extent that employees and customers used rail for access to the city centre, these schemes were beneficial to the rail network, despite the

peripheral location of stations: the PTE's station minibus service introduced in the early 1970s provided some sort of link.

Taken together, these developments in the 1960s and early 1970s showed how, in the most general sense, planning reinforced the importance of Manchester's CBD which was crucial to ridership on the local rail network. However, despite modernisation of Piccadilly and Oxford Road stations, no steps were taken to facilitate pedestrian access to them from the core of the CBD: this was not perceived as a planning issue.

During the second half of the 1970s Manchester's CBD entered a period of relative decline. This was partly a result of a contraction of the commercial core which was strongly associated with closure of railway freight facilities²⁷, but it also arose from competition from suburban town centres and the economic recession. In response, Manchester City Council (MCC) produced the City Centre Local Plan which was a new kind of statutory plan which a conscious promotional role. For example, it recognised the importance of office development to the centre and argued that:

Office activity is a major and vital part of the Regional Centre, providing substantial, wide-ranging employment opportunities and helping to sustain, both directly and indirectly, a wide variety of other uses and activities (MCC, 1984, 43).

The importance of transportation was recognised, particularly public transport, as central to the goal of attracting more activity to the city centre.

The abandonment of Picc-Vic was a serious blow for city centre access and for several years the best the PTE could do was the mini-bus shuttle service between Piccadilly and Victoria via the CBD. The concentration of trans-Pennine and local services on Piccadilly in 1988 further reinforced its primacy as the city's main station, but facilitated further running down of Victoria. The opening of Metrolink in 1992, with its street running penetration of the city centre, provided an imaginative and cost-effective solution in a very hostile political context. The city centre section runs through both Victoria and Piccadilly and passes close to the main retail, office and leisure areas.

Despite the surge in out-of-centre office development in the late 1980s, the CBD remained an attractive location (figure 29). However, the accessibility of office developments to the rail network was variable. For example, the square half mile continued to be a favoured location and, whereas it was reasonably accessible by

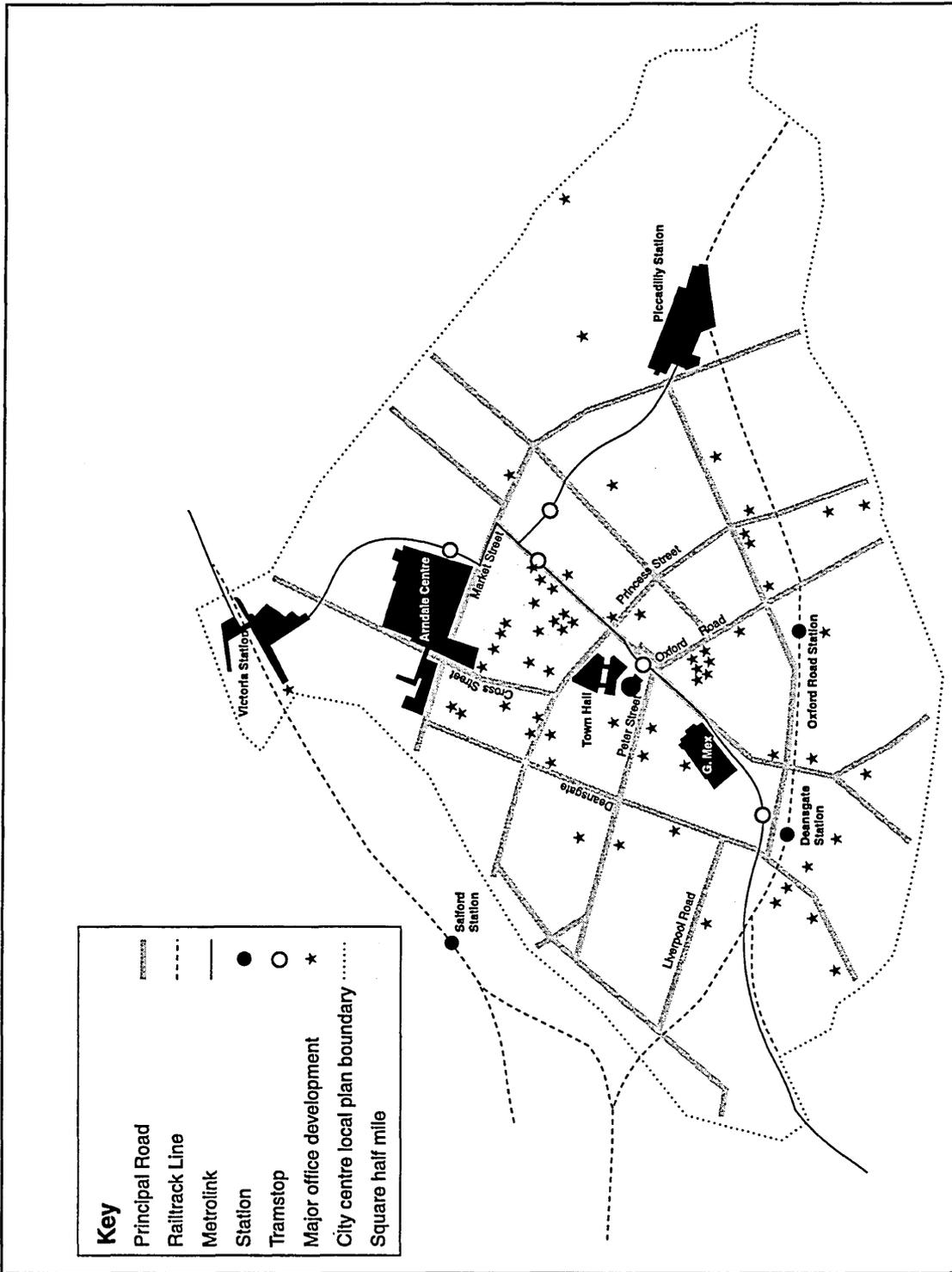
²⁷ Warehousing activities became road served and moved out to locations on the motorway network, typified by Warrington new town at the intersection of the M6 and M62

Metrolink, it was not close to the heavy rail stations. The pattern of office developments outside the square half mile, particularly those in the Oxford Road/Mosley Street area, was more favourable with regard to heavy rail access. What is clear however, is that unlike the 1960s, the areas around Victoria and Piccadilly were not attractive to significant office development during the 1980s boom.

The popular backlash against the large scale urban redevelopment of the 1960s and 1970s came to have positive impacts on planning policy for central Manchester, which in turn had positive implications for development and, thereby, demand for rail travel. Despite the blitz and redevelopment, many buildings from the Victorian and Edwardian periods remained in the early 1970s and, progressively, these were listed and incorporated into conservation areas (MCC, 1984, 30). Lower King Street had a significant concentration and, owing to its proximity to the prime retail area, it was pedestrianised. However, the conservation areas also included the peripheral Castlefield and Whitworth Street areas, and such notable buildings as Liverpool Road station and goods buildings, Central Station and the Great Northern goods building. Although the City Council had sought to promote the regeneration of these large areas of historic buildings, progress had been modest: significant successes included conversion of Central Station into the GMEX centre and creation of the Museum of Science and Industry in the former railway buildings on Liverpool Road. In order to further stimulate the market, in 1988 the Government handed regeneration of the area stretching along the Rochdale Canal from Castlefield to Piccadilly Station to the Central Manchester Development Corporation (CMDC). Intervention by CMDC (CMDC, 1990), and the increasing attractiveness of Manchester to developers in light of the favourable image projected through the Olympic bidding process (Kitchen, 1993), boosted market interest. The result was significant investment in the CMDC area in historic buildings and proposed new build, including the Bridgewater Hall and the Great Bridgewater office development (20,460 sq. m.)²⁸. All of this was accessible to Piccadilly and, especially, Oxford Road and Deansgate stations, as well as Metrolink stops at GMEX and St Peter's Square. On the other side of the CBD there was development of the Arena which incorporated the rationalisation of tracks through Victoria Station and construction of a new station under the Arena: this was a very significant development as it was the

²⁸ Although not completed until 1995-96 these developments were underway by April 1994, the thesis end date.

Figure 29: Major office completions in Manchester city centre 1985-95.



first attempt in Manchester to produce a high density airspace development²⁹. But despite this, the Arena also contained 1000 new parking spaces. More generally, the presence of around 20,000 long stay parking spaces in the city centre (Kitchen, 1995), particularly the large number of private and contract spaces, undermined utilisation of rail for CBD access.

Census data shows that between 1981-91 the proportion of journeys to work by rail fell from 2.4 per cent to 2.2 per cent in Greater Manchester (Beatty and Haywood, 1997) and, although this does not tell the full story with regard to rail utilisation for access to the CBD, it is indicative of the overall situation. Although it is necessary to go beyond the 1994 cut-off to develop an understanding of the impact of Metrolink, by 1996 this was carrying more passengers than the local heavy rail network, showing the positive effects of frequent, high quality services and improved CBD penetration (GMPTE, 1996). These attributes were, of course, missing from all of the heavy rail network.

Hypothesis two: conclusions.

The evidence shows the hypothesis to be proven. Manchester lost two of its four main city centre stations and investment at Piccadilly far outweighed that at Victoria which, despite partial rebuilding at the end of the period, enjoyed a worsening rail service with no electrification. Manchester experienced massive delay in securing improved rail penetration of the CBD and, when delivered, this only benefited local services on the Bury-Altrincham axis. There was no benefit for heavy rail users without changing onto Metrolink³⁰. By steering development to the CBD, planning policy was generally supportive in the 1960s and 1970s, although the experience of the 1960s in securing major trip generators near to Victoria and Piccadilly was not repeated in the 1970s. Subsequently circumstances forced a concentration of planning activity on the core of the CBD and it was not until the late 1980s/early 1990s that significant development activity was taking place in the peripheral areas nearer to/at the main stations. There was not sufficient momentum before 1994 for this to produce significant detail urban design improvements in main station access and environs.

Third hypothesis.

At the local level there has been limited association between the detail of suburban development and stations. There has been some provision of new stations and some examples of pro-rail trends in land-use planning, although these have

²⁹ It was also notable that, apart from Metrolink, local services using the new station were all operated by low quality rail buses produced in the 1980s.

³⁰ The city centre minibus continued post-Metrolink from Piccadilly.

been exceptional. Redundant railway land has been redeveloped predominantly for uses which do not directly stimulate demand for rail travel.

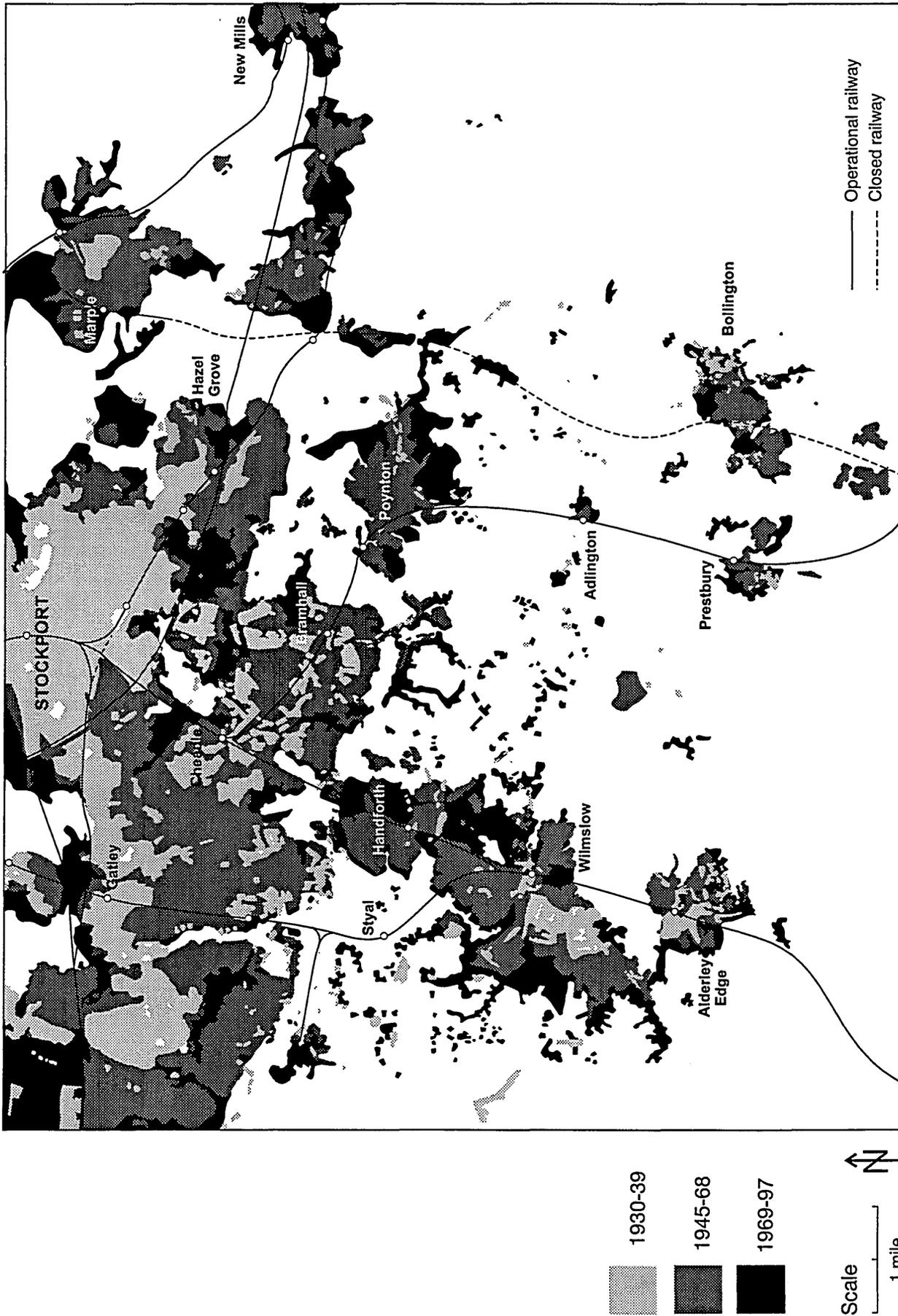
Third hypothesis: suburban corridors and redundant railway land.

The research focused on the south eastern part of the conurbation where the southern parts of Manchester and Stockport merge with north Cheshire. This area was chosen as it had experienced significant suburban growth and retained five radial rail corridors. One radial line was closed, the Marple-Bollington-Macclesfield route, although the northern stub of this between Marple and Rose Hill remained open. Other orbital routes and routes linking south Manchester with Central Station were closed as reviewed above. As a result of the WCML electrification three of the routes were electrified: the Styal line, Stockport-Cheadle Hulme-Alderley Edge and Stockport-Cheadle Hulme-Bramhall-Poynton-Macclesfield. The original Metrolink project envisaged conversion to light rail of the Manchester-Marple/Rose Hill route, but this did not take place.

The research method entailed tracking the chronological and geographical pattern of suburban growth by superimposing tracings from sequential Ordnance Survey maps of the area, as reproduced in figure 30. This shows development before 1939, development between 1945-68, and development between 1969 and 1997: the latter post-dates the end point of the research but was the only map version available.

Inspection of the map shows that development fell broadly into two geographical categories: the mass of the continuous built-up area in the north, and the discrete settlements to the south which, broadly, sit astride the rail corridors as 'beads on a string'. It is the latter which the research was particularly concerned with, especially in the electrified rail corridors. As outlined earlier, the core of these developed as rail commuter settlements before 1914, but there has been significant expansion subsequently as shown. In the most general sense, because of the broad association with the rail corridors, the map provides evidence that the planning system managed decentralisation in ways which were favourable to the utility of the railway network. The main tools used to achieve this were the power to prevent development in certain areas, typically through use of green belts, and to release other specific areas of land for development.

Figure 30: the railway network and suburban growth in South Manchester 1930-97.



However, on closer examination, the outcome can be seen to be not as favourable for rail as it might have been. It has been shown in this research that there is a limit to how far people are prepared to walk to a public transport stop: typically around 400 metres. What is clear from the map is that, generally, expansion of the settlements had been permitted to take place on their outer peripheries, at increasing distances from their centres: the westward expansion of Wilmslow was a good example. This, progressively, reduced the likelihood of residents walking to the station. Alternative means of transport to link housing areas with the station could have been provided, either bus services, cycle facilities or car parks. There is evidence of the latter at Wilmslow³¹, but the typical outcome is that commuters have opted to use their cars for the whole of their journey.

Two main factors have encouraged this. One was the development of the trunk road network : the radial M56 (and its extension into Manchester via the improved Princess Parkway) and the orbital M62/63³² (now the M60) were open by the mid-1970s. Construction of the A34 by-pass had commenced before 1994 and would reinforce the role of the A34/Kingsway axis as a commuter route into Manchester (this project was completed in 1995). The second factor was the decentralisation of employment and other trip generators to suburban locations, not readily accessible by rail. It will be recalled that by 1975 Cheadle Hulme had emerged as a rail accessible suburban employment node: it is notable that office and retail development in these corridors in the late 1980s was road oriented. Taken together, the difficulties at both ends of the journey made rail very unattractive to those who had access to a car.

The impact of green belt policy can also be seen to have had negative impacts in that there are long lengths of expensively maintained railway which pass through open countryside with no stations. In other cases there are extant stations but little development has been permitted around them: Styal and Adlington are key examples. Traffic at Styal became so limited that, whereas until the mid-1980s it had a half hourly service to Manchester, the service had become so sparse by 1994 as to be virtually unusable.

³¹ Wilmslow is an InterCity station and most car park users are likely to be travelling to London. This contrasts with the situation at Hazel Grove where there is a large car park and only a local train service to Stockport and Manchester. Hazel Grove was promoted for park-and-ride by GMPTE whereas Wilmslow is outside the PTE area.

³² The final north eastern quadrant of this orbital motorway between Denton and Heaton Park did not open until 2000.

This mapping exercise revealed the sorts of outcomes from the planning process recorded by Hall in the 1960s, with the additional impacts of the accelerated road-oriented decentralisation of the 1980s. The map clearly shows the power of the planning system to manage the land development process, but it also shows that this has not been used in ways to maximise utilisation of rail services.

The second element of the hypothesis three research comprised analysis of the re-use of redundant railway land. This related to land in the City of Manchester and utilised records of all disused land held by the planning department from the mid-1970s, to inform the inter-departmental Sites Appraisal Group (SAG). The initial trigger for this had been the need for sites for council housing, once both high rise and overspill development were abandoned, but the mechanism became used as part of the general regeneration process. As the Property Board made sites available for development they were entered into the SAG system. The vast majority of the sites were areas of sidings, or small goods yards, which became redundant as a result of the collapse of the wagonload business and the closure of rail served industries. Although it has not been possible to quantify the proportion of all redundant railway land in the conurbation which entered the SAG system, it is fair to say that because the City of Manchester lies at the heart of the area's railway network, the sites studied were very representative.

The research identified 50 sites with a total area of approximately 400 acres (162 hectares). Tracking the subsequent use of the sites through field work has shown that the largest category of after use was industrial, with 29 per cent of the total. Typically this comprised small units and none of it was rail connected, although there was a theoretical potential for use of Freightliner. One large site was used for the new road-only served Royal Mail³³ facility on Rochdale Road. Vacant land was the second largest category at 92.5 hectares, or 23 per cent of the total: this reflected the problematical nature of much disused railway land which was, typically, elongated and inaccessible. Nearly all of it was in East Manchester too where the property market was extremely weak. Together, vacant and landscaped land comprised almost 113 hectares, almost as large as the industrial category: landscaped land such as the Irk Valley is very little used, acting as an informal greenspace. Approximately 11.5 per cent of the land was used for transport purposes, with one site partially in use as a rail-served stone terminal and another

³³ As part of a major restructuring of Royal Mail's use of the railway network in the mid-1990s, all rail usage in the Liverpool-Manchester belt was concentrated at Warrington which is accessed by road. Previously the disused Mayfield Station and an adjacent large building erected in the 1960s had been used by Royal Mail for the rail parts of their Manchester business

site being used for the Metrolink depot: the largest site was the former main line to Manchester Central between Didsbury and Chorlton which is a linear walkway, although it is safeguarded for use as an extension to the Metrolink system. Where sites were redeveloped for retail or residential use their potential impact on rail ridership would have depended upon their proximity to a station and, in the case of retail, on the propensity of customers to use rail to access the particular kind of outlets concerned. The two largest residential sites were close to Dean Lane and Moston stations respectively, but the retail uses were supermarkets or D-I-Y stores and were not likely to generate rail traffic, although the latter adjoined Mauldeth Road station.

It was in the city centre that redevelopment had the largest potential for promoting rail ridership, albeit indirectly. The use of the former Liverpool Road station and goods buildings for the Museum of Science and Industry created a rail accessible tourist facility, and the Nynex project was an airspace development over Victoria station. Central Station did not become a SAG site but its use as the GMEX exhibition centre had positive implications too. However, both the Arena and GMEX also comprised large numbers of car parking spaces; 1656 between them. Three other redundant railway sites which did not enter the SAG system were the sites of the former Exchange Station, the Great Northern³⁴ goods building adjoining Central, and most of the former goods yard³⁵ adjoining Piccadilly Station. These had been in long term use as car parks with 1440 spaces between them. Additional parking space adjoining Piccadilly was retained by BR for Intercity users.

Third hypothesis: conclusions.

The evidence shows the hypothesis to be substantially proven. Land-use planning was pro-rail in the corridors studied only in the most macro-geographical sense. Even before the onset of Thatcherite *laissez-faire*, new development was poorly located for rail access, and during the 1980s the rail corridors and their stations were largely ignored as locational factors. Although some new stations were built in the area studied, it is significant that none were built on the main electrified corridors. Generally stations were not utilised as the focal points for new suburban nodes, despite some fairly large developments in the corridor. Rather than being

³⁴ This was a 'state of the art' integrated goods building when erected in the late nineteenth century: it is now listed and is currently undergoing conversion to a retail and leisure centre. Controversially, the structures which carried the approach lines have been demolished. The viaducts over the Castlefield basin which gave access to this building were listed but unused for many years until re-utilised for Metrolink.

³⁵ The former Great Central goods building was listed and remained vacant until late 1999: it is currently being converted for residential use.

higher density and designed around pedestrian access from stations, the norm for commercial development was low density schemes along roads. The new Airport rail link was the exception, but even this failed to provide access to the many office developments built in the locality.

Outside central Manchester redundant railway land has not been redeveloped in ways likely to promote rail utilisation, except in a minority of cases with the two housing sites (SAG 337 and 339) being the most notable. The major qualification to the finding in favour of the hypothesis was the fact that there were several key sites/railway structures in the city centre where significant re-use or redevelopment was likely to have promoted rail owing to the nature of the end use and proximity to stations. However even these developments comprised generous car parking facilities and the overall effect is likely to have been to stimulate access by car.

Overall conclusions from the case study.

The case study has demonstrated the richness of experience in Manchester and the value of grounding the study in a single conurbation. The application of the hierarchical approach has proved to be an effective tool in understanding the outcomes, and the hypotheses have been proven. The most notable conclusions are to draw attention to: the importance of the creation of the PTA/PTE structure to champion the local rail network; the continuing importance of Manchester's CBD to the passenger rail system; and the inordinate length of length of time it took to deliver even a partial solution to the problem of poor rail penetration of the CBD. The planning system was broadly supportive of promoting rail access to the CBD throughout much of the period, although it was never single-mindedly focused on delivering high density development around stations, except at the Arena at the end of the period. Generally, suburban planning delivered little for the rail system outside of restraining the excesses of housing decentralisation and limiting commercial developments to town centres or other rail accessible locations, although even the latter was abandoned in the 1980s. Outside the city centre the redevelopment of redundant railway land had minimal impacts on demand for rail services.

PART FOUR

Conclusions.

The case study has demonstrated the robustness of the analysis developed in parts two and three and the value of the spatially hierarchical approach. The research showed two very important, but different, aspects to the relationship between railways and planning in the Manchester conurbation, one with regard to suburban growth and the other with regard to Manchester's city centre.

The extent of line and station closures in the Manchester suburbs was large, despite the survival of several routes scheduled for closure by Beeching. Although the PTE opened new stations, these were only a third of the number closed. On the other hand, the area experienced extensive suburban growth which was clearly influenced by planning policy but, on the whole, this was poorly located with regard to the surviving railway network. On the other hand, despite the ebb and flow of policy and the property market, planning delivered significant trip generating uses into Manchester city centre, which continued to be the hub of the railway network.

It was with regard to management of the pattern of suburbanisation therefore that planning policy and practice was weakest in terms of its impact on the utility of the railway network. The fact that it was strongest with regard to central Manchester reflects an important element of the rationale for the planning system - intervention in the market to limit the impacts of urban decentralisation. However its effectiveness in this regard was hampered by the lack of a rail oriented ideological thread and the practical difficulties presented by the inherited locations of the major city centre stations. The latter point, and the general significance of the CBD outcomes shows, the enduring impacts of the geography of the Victorian railway system.

A final point can be made about the place of GMPTE with regard to the PTE typology developed in chapter seven. GMPTE began by aspiring to have a role which would place it in the same category as Strathclyde and Merseyside, but abandonment of Picc-Vicc placed it the same category as the West Midlands with a minimal stance towards the rail network. However with the development of Metrolink, GMPTE ended up in the first category along with Tyne and Wear and South Yorkshire as owner of its own light rail system utilising former BR lines, as well as being BR's client for the heavy local rail services.

PART FIVE

Introduction.

Part five comprises chapter ten, the final conclusions to the thesis. This begins by drawing together the conclusions from parts one, two, three and four. It then considers the scope for further research which could reinforce the analysis in parts two and three, and provide alternative means of testing the hypotheses used in part four. The chapter concludes by demonstrating the relevance of the methodology and findings to contemporary research into the relationship between land-use planning and the railway network.

CHAPTER TEN

CONCLUSIONS

Part one.

Part one developed the overall methodology and structure to the research in chapter one, and chapter two looked at the formative period between 1830-1947, wherein the railways moved from dominance to a position where they were successfully challenged by road modes. In the early years, despite *laissez-faire*, Gladstone and others tried to develop the case for the State to have a greater role in railway network development, but the 'Railway Interest' successfully opposed this. Interestingly though, this met its match in the 'Landed Interest' and that clash seems to have characterised the fault line between the railway industry and land development which was to continue subsequently, despite deep institutional changes on both sides and overall changes in society, politics and the economy.

Chapter two showed that the exclusion of railway companies from land development did not preclude railways from becoming deeply embedded in patterns of urban form: their primacy in the transport market ensured that they would. But the lack of planning meant that the network came to exhibit certain shortcomings in its geography and its relationships with urban form which would, eventually, undermine its role:

- duplication of routes at local and strategic levels;
- duplication of facilities, particularly stations and goods depots;
- poor location of stations with regard to town and city centres;
- failure to maximise network benefits, such as leaving strategic gaps and the poor development of cross-country routes;
- restricted vertical loading gauge.

The work of the Royal Commission on London Traffic, and that by planners such as Unwin and Howard, showed that these shortcomings were recognised at the time. There was the beginning of a political and professional ideological convergence around cheap trains, suburban social housing, stations and urban design, railway companies and the development of surplus lands, and the creation of public bodies to intervene in metropolitan railway development.

But this was short lived. By the inter-war period town planning had developed a locus around decentralisation and self-containment. The impacts of competition and the process of amalgamation triggered by the 1921 Railways Act forced the railway companies to reinforce their traditional focus on internal matters. Their

outward gaze was limited, typically, to involvement with other transport modes such as feeder lorry services or financial interests in bus companies. The experiences of Metroland and the Southern Electric, the ideas of railway industry figures such as Selbie, Pick and Walker although significant, were notable because they were exceptional. They were not reciprocated by the ideas of architects, planners and municipal engineers amongst whom there were very few who displayed aspirations and/or played roles like those of Barman. The work of Unwin had offered the most potential but, at the end of the day, his priority was the design of medium to low density, small settlements. Abercrombie displayed some understanding of railway matters, but integration of land-use with the network was not his priority and contemporary planning's overall ideological stance towards railways in London was dominated by aesthetic concerns.

Part one concluded with the development of the agenda which formed an analytical template for the core of the thesis. A pre-condition was the creation of institutional arrangements to facilitate collaborative working between the land-use planning and railway sectors at national, regional and local levels: the creation of the LPTB and its work alongside the LCC had been the most notable achievement pre-1947.

With regard to the railway network, the policy agenda included the following:

1. rationalisation of the network in order to remove duplicate routes and facilities, but with an eye on both contemporary diseconomies and the potential for future utility;
2. development of railway services to ensure that their pattern and quality would be competitive with that offered by road networks and road vehicles;
3. closing strategic gaps in the network, particularly with regard to CBD penetration and access across cities;
4. development of a programme of station enhancement to maximise their convenience and attractiveness to travellers, and station building so as to ensure that new urban areas would be located close to points of access to the network;

The town planning policy agenda included:

5. the general articulation of expectations about changing patterns of urban form in ways which would identify the implications for the potential utility of existing main line, suburban, cross country and rural railway routes, and the utility of new routes;
6. management of the redevelopment process in existing urban areas to maximise access to railway stations and rail freight facilities, with appropriate guidance for the location, layout, and density of development;

7. management of the location and character of greenfield site development so as to ensure accessibility to the railway network, with appropriate guidance for the location, layout, and density of development.

Part two.

Part two was concerned with the 1948-68 period. The analysis showed that, at the outset, the political centre of gravity had moved towards interventionism in transport and land development. This was characterised by ideology around integrating transport modes, but was poorly developed with regard to the relationship between land use and the railway network. The initial priority for the railways was modernisation and, the fact that General Sir Brian Robertson headed the BTC through the 1950s, speaks volumes about what sort of organisation the BTC was perceived to be by the Government. The timing of the post-war recovery meant that, ironically, it was the Conservatives who gave the BTC the opportunity to invest. But the lack of commercial vision and rigour in the Modernisation Plan, coupled with the political implications of rising car ownership, produced a paradigm shift in the stance of subsequent Governments of all parties towards transport planning and railways: this was the dominance of what came to be called 'predict and provide' and road building, and 'the Treasury view' with regard to the railways. The latter was characterised by deep seated suspicion of the competency of BR which led to a very tight rein on investment: it was very difficult for BR to develop an image which was different to the perception of it as some sort of 'lame duck', dependent on public 'subsidy', a pejorative term when compared with use of the word 'investment' which was associated with road building.

As a nationalised industry, BR managers were excluded from the political process and, during this period, the 'railway lobby' effectively comprised those affected by closures and those concerned about the impact of closures on the less mobile members of society. If a railway manager raised his head above the parapet and 'went public' with views which were contrary to official policy, he (the research did not identify any women who were senior managers) risked dismissal, as in fact happened in the case of Gerald Fiennes (Fiennes, 1967). What became clear however, was that by 1968 there were two railways: the commercial one and the social one. Recognition of that dichotomy was a step forward.

Planning ideology and practice changed dramatically over the period. Initially planning's role was supporting public sector led reconstruction, urban renewal and development of the welfare state, along with protection of agricultural land. By the end of the period, even under a Labour Government, these activities were counterbalanced by a deep involvement in managing private sector property

development. The common thread between the two was an overriding acceptance of the primacy of planning around roads and a remarkable and massively influential political and professional convergence around the ideology of 'predict and provide'. The nationalised railway industry did not produce the likes of Selbie or Pick, and after the 'greyness' of Robertson there came the notoriety of Beeching who epitomised the hawkish, Treasury view. Road building, on the other hand, produced Marples, Buchanan, Manzoni, and T. Dan Smith, as the public sector side of an alliance which also included major private companies, to create a transport culture which claimed the allegiance of a large slice of the population. Those situations where there were pro-rail planning policy outcomes, such as new town location or airspace development at stations, were notable because they were exceptions.

The conclusions of part two with regard to outcomes on the list of points developed in part one were:

1. rationalisation went well beyond removing duplicated routes with the goal of cutting back to a commercially viable core network, rather than with an eye to maximising the network's future scope and utility;
2. services and fixed infrastructure on the main line network radiating from London were modernised, although only one trunk route was electrified; outside greater London those commuter and rural services which were not withdrawn were modernised by the introduction of some EMUs but mainly DMUs although, where travellers had a choice, the quality was unlikely to persuade them to prioritise the train over the car; those rail freight services which were retained, were significantly improved but the marshalling yard programme was not a success;
3. no significant sections of new railway were built and in fact some cross CBD tunnels or well located stations were closed, and only one new Underground railway line was built in London;
4. many stations were rebuilt, occasionally as part of a larger commercial developments, but hundreds were closed and there were very few new stations;

With regard to the town planning agenda:

5. planning policy produced patterns of development which were generally poorly related to the railway network, with the exception of some strategic developments such as the new towns and some major industrial complexes, the most significant of which were the power stations which were permitted development;
6. the redevelopment process in existing urban areas generally served to undermine access to railway stations, and the location, layout and density of development generally took little note of station location;

7. with the exception of most of the new towns, the development of greenfield areas generally produced settlements which were not focused around rail corridors, and the location, layout and density of development generally took little note of station location, even in the new towns.

Despite this negative outcome, part two ended on an optimistic note because of the obvious strengths of the commercial railway and the policies for the social railway set out by Barbara Castle. Behind the 1968 Transport Act was a recognition that there were limits to the ability of cities to absorb rising road traffic, that not everyone had access to a car, and that rail transport had a role to play in tackling both of these problems. These two facets of the case for rail reflected wider ideological developments around the emergence of 'the environment' as a political issue and the 'rediscovery' of poverty as the post-war boom faltered. Together with the optimism around the commercial railway, and the renewed emphasis on strategic planning, these converging ideological trends had very positive implications for the future development of the relationship between railways and planning.

Part three.

Part three was concerned with the 1968-94 period. The analysis showed that, at the outset, there were similarities with the late 1940s, but some significant differences too. As part of a second ideological swing towards integrated public transport, there was support for greater intervention in the railway industry to limit the impact of the commercialism of the 1960s. However, the severe economic crisis of the 1970s meant that, whatever its successes, the BRB's costs escalated, and Government intervention limited their ability to raise prices accordingly. The solution of 1968 provided only a temporary respite. The economic downturn post-1976 further compounded the problems and, by the late 1970s, the railway network was characterised by under-investment and what Peter Parker called 'the crumbling edge of quality'. On the other hand the achievements of the PTEs were a notable success with significant improvements in railway planning and investment, until the downturn post-1976. The presence of the PTEs, the GLC and the metropolitan counties, and the creation of the BR Property Board, put in place institutional arrangements which could deliver pro-rail outputs, if the economic context was favourable and policy makers sought to use the structures favourably.

The major shifts in planning ideology in the late 1960s impacted at the local and strategic levels. At the local level came the pressures to democratise the planning process associated, particularly, with the change in housing policy from clearance to rehabilitation. At the strategic level came structure planning where there was a link with the emergence of the pro-rail stance in urban transport planning.

Public involvement with planning spread to resistance to urban road building. This mix of institutional and ideological change was very favourable for the relationship between planning and the railways as compared with the situation post-1948, and there were some notably successful outcomes in the 1970s.

The economic downturn of the late 1970s, followed by Thatcherism, initially produced a very hostile policy context for the planning-railway interface. The BRB responded positively and the new emphasis on customers and markets under Robert Reid produced a break up of the monolithic 'corporate railway' and creation of the sectors. This led to a re-conceptualisation of the relationship with national and local government and to them being perceived as 'customers'. The BRB encouraged managers to pursue partnerships with local government, which extended to liaison over strategic and, to a lesser extent local, land-use planning policy development. The creation of Vacant Land Registers and pressure from central Government to reduce dependency on the public purse, also forced the Property Board to become more aggressive in its land development activities. Although, on the one hand this led to short termism, on the other it produced high density, commercial developments around many major stations and countered the general market trend of car-oriented decentralisation, the archetypal development form of the 1980s.

Town planning had much more difficulty in finding a response to Thatcherism. With so much emphasis on the primacy of market forces and the active encouragement of developments which ran counter to existing strategic policies, the very existence of planning was called into question, not least by planners themselves (Reade, 1987). This hostility was characterised by the creation of the UDCs and abolition of the GLC and metropolitan counties. Initially, it was only through the work of the Property Board, and in situations such as Docklands or the development of the Channel Tunnel terminals where the market happened to favour rail, that developments of any significance around rail nodes were achieved. But the successes were notable and, to varying degrees, did arise from positive engagement between the planning and railway sectors. In fact, the positive products of the market led trends produced a further shift in ideology back towards pro-actively co-ordinating the sectors. These trends produced an unexpected ideological convergence around rail in the late 1980s which was widely perceived as a 'railway renaissance'. This produced politically astute BR managers, typified by Chris Green, who were well aware of the importance of liaison with land-use planning authorities.

Despite the downturn in the economy in 1989-90, railway-oriented transport and land-use planning ideology continued to strengthen. Several factors combined to produce this trend: these included the reaction against the development pressures

of the previous few years; the perceived regenerative potential of rail schemes; and the general rise of environmental consciousness which focused increasingly on the negative aspects of road traffic growth.

Changes in planning ideology produced the amended PPG13. This, for the first time since 1947, was an official planning policy document which set out how land-use policy should be utilised to produce patterns of urban form which would facilitate utilisation of the railway network for passenger and freight purposes. It had taken nearly 50 years to arrive at that point. It seemed remarkable that this innovation should have been produced by a government which took its ideological inspiration from Thatcherism. There has been much debate as to why the Conservatives used planning to lead their policy thrust towards environmentalism, and critics saw the reasons as being that it would have least impact on constraining business, whilst having a high public profile. Nevertheless, the experiences of the 1980s showed that there was real potential to skew land development patterns towards rail and that, in congested urban areas at least, there was an identifiable market trend towards that and planning could be used to encourage it.

The conclusions of part three with regard to outcomes on the points developed in part one were:

1. although much reduced, the process of rationalisation continued, but there was a counter thrust which saw re-opening of closed stations and lines in major conurbations and their hinterlands, demonstrating that the process of rationalisation had been taken too far;
2. significant improvements in the main line network were made to allow faster speeds, with completion of London-Scotland electrification on both main lines, electrification of local and semi-fast services on routes outside the South East was limited; at their best the quality of passenger services improved significantly with regard to speed, comfort and frequency for intercity, regional and local services, but quality was patchy and, at the margins, cramped, squalid and unreliable. Similarly with regard to freight, core services with regard to bulk traffics were reliable and competitive, but the railway just did not try to compete for most traffic, although the advent of the Channel Tunnel brought better prospects for international intermodal services;
3. there were significant strategic improvements to the network including cross-CBD tunnelling/tunnel re-opening, LRT street running, building of new railway/light railway routes into major developments/regeneration areas, construction of one new London tube route, and opening of the Channel Tunnel;

4. although some stations were closed, the balance was heavily in favour of station openings, and there were some notable examples of major mixed use redevelopment projects in major towns and cities around stations;

The following summarises the outcome with regard to the operation of the planning system:

5. planning practice in the 1970s steered major trip generating uses to CBDs and there were some supportive developments in the new towns too which produced positive outcomes for intercity and commuter services, but this was severely undermined in the 1980s apart from special cases strongly favoured by the property market;
6. planning practice in the 1970s steered development to locations in CBDs which were accessible to stations with generally a much weaker relationship in suburban developments, but even the CBD focus was undermined in the 1980s; during the 1970s the detail of this relationship was generally poorly handled, but this was exceptionally well handled in those cases in the 1980s where development at and/or around stations was favoured by the property market; the closure and disposal of freight facilities continued throughout the period, although construction of Channel Tunnel terminals brought some engagement with the planning process;
7. planning practice throughout the period with regard to greenfield areas continued to be to prevent their development as far as possible and, where development took place, the prime transport consideration was to provide access by road: the exceptions to this trend continued to be in the new towns although the pace of development in most of them slackened considerably in the 1980s and, even where development continued, its relationship to the railway network was weaker than previously.

This completed part three of the thesis but the product of parts one, two and three were used to draw together the three hypotheses which formed the basis of part four, the Manchester case study.

Part four.

The first hypothesis tested was that:

the emphasis on main line investment has led to: piecemeal improvement in railway services with priority for those on trunk routes to London; removal of some services on secondary and branch lines and stagnation of others. In the most general sense planning has been supportive of the network through containment and managed decentralisation, but has not been specifically rail oriented, and there was only a loose spatial fit between patterns of development and the broad geography of the

network, with evidence of significant dislocation. The overall relationship can be characterised as inconsistent, both spatially and temporally.

Findings.

The hypothesis was proven.

The second hypothesis was that:

rail access to the regional CBD has been rationalised with priority for stations associated with the trunk route to London; there have been significant improvements for access by local services after 1968 by the PTE, although this has been subject to 'queuing' mechanisms, sporadic and under-conceptualised. Although land-use planning has been broadly supportive of these investments by steering major activity generators to the CBD, proximity to stations has not been a prime consideration and urban design initiatives have not focused on the public domain around and pedestrian access to stations.

Findings.

The hypothesis was proven, with the exception of the airspace development at Manchester Victoria.

The third hypothesis was that:

at the local level there has been minimal association between the detail of suburban development and stations. There has been some provision of new stations and some examples of pro-rail trends in land-use planning, although these have been exceptional. Redundant railway land has been redeveloped predominantly for uses which do not directly stimulate demand for rail travel.

Findings.

The hypothesis was proven, with the qualification that the second largest category of re-use of redundant railway land was a combination of 'vacant' and 'landscaped', and that the re-use of land/buildings in Manchester city centre had largely indirect, but beneficial, impacts for rail.

The underlying aims of the thesis.

The main methodological tool used in the thesis has been the concept of the 'interface' between the town planning and railway sectors. In chapter one this was developed into three research questions which have laid at the heart of the analysis. It remains to return to these to distil out the essence of the findings.

Question 1. What were the institutional structures for railway management and land-use planning and to what extent did these facilitate the development of positive relationships between the two sectors?

Findings.

British Railways and land-use planning were both State activities but were in quite separate realms. The railways were centrally managed as a production oriented industry, whereas planning was a service, mainly of the Local State. Although, from the outset, BR's structure had a strong regional dimension, this was largely limited to operational matters, not external liaison. In any case there was never a statutory layer of land-use planning at this level, although there was an interface between the railway regions and informal structures for planning in the 1960s and post-1986. The latter involved the railway sectors rather than the regions.

Creation of the PTA/PTEs put in place institutions which lay at the interface between the metropolitan counties, once they were created, and BR, although their remit only concerned local services. Given that the LPTB was created in 1933, and that there was widespread recognition of its achievements, it is surprising that it took another 35 years before similar organisations were created in the provincial conurbations.

The BR Property Board had a very specific role with regard to the interface between the planning and railway sectors. In the right circumstances, this could be very positive in delivering railway oriented development projects, although the Property Board cannot be perceived as having continued the traditions of Metroland, or even of the relationship between the Southern Electric initiative and suburban developers. Its role was much more narrowly focused on short term cash flow.

It is notable that the PTA/PTE arrangements did not apply to London. Although the GLC took over London Underground, the operation of main line rail services remained in the hands of the BR regions and development of commuter services as well as inter-city ones was handled directly by the DoT. Notwithstanding the shortcomings of these arrangements for London, overall the institutional arrangements in the 1970s were much more favourable to facilitating liaison between the planning and railway sectors than in the previous period. It is also important to recall that the creation of the DoE in 1970 placed planning in a locus which implied a reinforced role for planning. The amalgamation of the DoT and DoE reflected the commitment to integration between planning and public transport and it is notable that several major local railway projects were conceived and delivered during this period.

Thatcherism vastly reduced the propensity to use the institutional structures for the purposes for which they had been created. This was followed by abolition of the GLC and the metropolitan counties, and the return of London Transport to direct ministerial influence. However these negative trends were counterbalanced by creation of the BR sectors and market ideology led to local government as a whole,

not just the PTEs, becoming seen as valued customers, so there was a drive to develop links across a broad front, including the shire counties. Once the resurgence of regionalism began in the late 1980s, the relationship between the railways and planning authorities was reinvigorated. It was particularly strong in the South East where liaison was facilitated by the presence of Network South East, Serplan, LPAC and London Regional Transport, this being reinforced at the local level by the work of the Property Board and the property arm of LRT. This amalgam of residual bodies from the 1960s with those produced in the 1980s, created a very positive institutional structure, unexpectedly so given the ideological context of the period. Their strength was at the regional and sub-regional levels, and was reflected in joint work on such matters as the London Rail Study and railway re-opening schemes such as the Robin Hood Line. The absence of effective strategic land-use planning bodies in the former metropolitan counties was a serious weakness though, which the presence of various informal groupings of district authorities, and the continued presence of the PTA/PTEs, could not make up for.

2. What were the main features of policy for the two sectors and to what extent was policy in each concerned with the relationship between them, as opposed to other matters, and was this concern likely to be positive or negative in its impacts on utilisation of the railway network?

Findings.

Policy in both sectors was firmly focused on matters internal to each and at no time did policy with regard to the relationship between them achieve a priority as high as the internal priorities. In the early BTC period, against a background of 'public service', the priority for the railways moved from 'make-do-and-mend' to modernisation. The failure of the latter led, in the 1960s, to an emphasis on cost efficiency and rationalisation against a new ideological background of private sector inspired commercialisation. The initial priority for the planning sector was housing renewal and planned decentralisation set against an ideological background dominated by the welfare state. By the 1960s the early priorities remained, but management of private sector renewal and decentralisation had been added along with a new ideological orientation around the private property market.

There were three significant relationships between the sectors during this period. The first was very 'macro' and indirect: the exercise of containment policies which sought to limit decentralisation and thereby retain more of the inherited pattern of urban form, and its relationship with the railway network, than would otherwise have been the case. The second was more positive: the location of new and expanded towns on rail routes. The third was local and focused around station

development. But this was poorly developed as illustrated by the shortcomings of the planned relationships between stations and town centres in the new towns and the limited number of major development schemes at city centre stations.

After 1968 there were more positive policy developments derived from development of the social and environmental cases for rail transport. One set arose from creation of the PTA/PTEs who had a duty to develop local railway networks and facilitate access to them. It was only in the work of the PTEs that emphasis on policy around the relationship between land-use and the railways approached the emphasis given to that on public transport itself.

Outside the conurbations the priorities for the BRB in the 1970s were to secure funding for modernisation of the commercial services whilst continuing to cut costs and maintain the level of service of the social railway. Away from the main lines there was a continued drift towards closure and, overall, an underlying sense that the network was locked into long term decline. The success of the HSTs produced a welcome lift which reinforced the significance of city centre stations. After several difficult years in the early 1980s the creation of the sectors, and the economic boom, produced a remarkable change in fortunes which led to ambitious investment plans being made.

The priorities for land-use planning in the early 1970s remained unchanged, although there was encouragement for development of strategic policies to facilitate access to public transport. However it took a decade for these to become embedded in adopted structure plans and, by that time, they had slipped down the list of priorities because of the emergence of the inner city problem. Nevertheless, the broad containment policies of the previous period had been refined into policies which, specifically, sought to concentrate major trip generators in CBDs and to resist their location on out-of-centre sites, which was supportive of rail utilisation. In some notable cases this was reinforced by more site specific policies to safeguard closed trackbeds and station sites. The existence of these policy bundles in Greater London and the conurbations, along with the rail policies of London Transport (the GLC) and the PTA/PTEs, was the most robust policy framework created for the relationship between land use and the railways since 1948.

However this only fully emerged by the late 1970s/early 1980s by which time Mrs Thatcher was in power and her Government ignored it. The depression around railway policy in the early 1980s was paralleled by that around land-use planning. Planning was perceived as having a very limited role, as a means of facilitating property development and as a regulatory tool to limit the excesses of the market in politically sensitive areas (for the Tories) such as green belts, national parks and

conservation areas. It took a decade for the role of planning as a whole to be reinvigorated and gain a new sense of direction and value. When that came in the early 1990s, it was informed by the market led, railway oriented policy developments of the 1980s and was reinforced by the responsiveness of the sectorised railway. The combined result was that by 1994, notwithstanding the effects of the recession, policy with regard to the relationship between the two sectors reached its highest degree of sophistication in the whole of the post-war era. However, just as the gaze of the sectors towards each other strengthened, the mutual confidence and understanding was thrown into turmoil by the commitment to privatisation. Railway policy making more or less collapsed as managers focused on forming private businesses.

3. What was the outcome of the interrelationships between institutional structures and policy for the two sectors as measured by: the geographical characteristics of the railway network and the intensity of the service on it; patterns of land use; and the degree of spatial association between patterns of land-use and the railway network?

Findings.

The overriding outcome with regard to the BR network was that geographically, it was 'undeveloped'. Total length of route declined from 31,593 kilometres in 1948 to 16,528 kilometres in 1992/93, a reduction of 48 per cent: the peak for closures was between 1960-74. Closures were most strongly felt in rural areas although, as shown by the Manchester case study, many lines not on trunk routes to London were closed in urban areas too.

Closure is not the whole story though: the length of passenger route open fell from 23,820 kilometres in 1955¹ to between 14,300-400 in the late 1970s, a decline of approximately 40 per cent, a lesser decline than for the network as a whole. Then, as a result of re-openings, closures and transfers of routes to non-BR operations, passenger route length moved up and down within this band for the rest of the period, apart from 1991/92 when it dipped below 14,300 kilometres. When the various light rail systems which utilised former BR routes are added in, the result is a gross increase in the length of route of the passenger network from the late 1980s. In addition station closures were balanced by openings from 1976 and the number on the BR network began to increase, with those on light rail systems pushing the total up further.

In addition, although the railway network was severely cutback, the retained network was used much more intensively for passenger traffic. The relative success

¹ Data on passenger length of route is only available from 1955 in official statistics.

of rail as a public transport mode was reflected in the fact that, broadly speaking, in 1994 passenger kilometres were the same as they were in 1948, having been somewhat higher during the late 1980s boom. This was not the case for freight traffic though, which declined from 37 to 13 billion tonne kilometres, a decline of 65 per cent. The separation of freight generating activities from the railway network was the most negative aspect of the relationship between the planning and railway sectors.

Until the 1970s there were relatively few examples of specifically rail oriented land-use planning outcomes. The list included: the location of the new towns and construction of a few new stations at them; airspace developments at a couple of London termini; the redevelopment of Birmingham New Street; and office developments at or near to other major provincial stations such as Manchester Piccadilly. In resisting more dispersed car oriented suburbanisation on the North American model, the general thrust of containment policies put some sort of base under the relationship, but the overriding feeling in looking back is one of missed opportunities. Before the Beeching Plan there had been capital for railway investment and a public sector driven decentralisation process: there was great potential for integrated planning but, what was lacking, was a railway-oriented vision of the sort which underpinned the post-war development of Stockholm, Copenhagen or Paris (see later).

The vision which inspired the planning of British cities was road oriented and crystallised as the Buchanan plan. Although Buchanan was aware of the need for efficient public transport his report had no effect on the Beeching rationalisation. But when the reaction against urban road building set in a decade later, improving local railways as an alternative was an obvious choice and the PTA/PTEs achieved a great deal before the onset of recession halted further investment. Construction of the Newcastle Metro along with redevelopment at Eldon Square served to emphasise the inadequacy of the achievements of the 1948-68 period.

A significant feature of the post-1968 period was the re-opening of closed railways and stations and PTA/PTEs and 'shire' counties expended considerable energy and capital in achieving them. Re-openings were evidence of over-rationalisation, a failure of planning in the broadest sense. The case for re-openings stemmed from the growing need for increased labour mobility as a result of continuing structural economic change, and as part of road congestion reduction strategies. The fact that so many re-openings were achieved, usually with the active involvement of the land-use planning process, was evidence of successful interaction between the sectors. But as this amounted to replacing that which had been taken

way just a few years previously, it emphasised the inconsistency and inadequacy of the British approach.

The 1980s was a crucial decade for the relationship between planning and the railways. By that time there had been plenty of experience in delivering substantial improvements to intercity and local railway networks and land-use planning policy was much more pro-rail than at any time previously. The mid-1980s boom produced a flood of property development and Treasury income was boosted by North Sea oil revenue: there was scope to pick up the thread of rail investment which had been severed by the mid-1970s recession and to utilise the planning system to manage the redevelopment of city centres as well as creating new rail accessible suburban nodes. Instead, the Thatcher Government chose to relax planning control and the typical commercial developments of the period were not accessible by rail. The Manchester case study served to show how, even where there was rail investment such as the Airport link, this was under-conceptualised and there was no vision of creating a rail served office employment node around it. On the other hand, at Salford Quays where a relatively high density out-of-centre employment node was created, there was no contemporary commitment to developing it around new railway infrastructure². The exceptions to these outcomes, where the market favoured rail, were strikingly better than anything achieved previously with regard to facilitating rail access, and architectural quality: compare Croydon with Canary Wharf, Birmingham New Street with the Broadgate Centre. The conclusion is that, in just the same way that two decades of potential integration between planning and the railways were lost between 1948-68, another decade was lost in the 1980s, despite over a decade of comparatively good practice in between.

A one sentence conclusion to the thesis is this: there were eight years from 1968-76 when the necessary preconditions for a positive relationship between the planning and railway sectors existed, with another period of four years from 1988-92, but the overall relationship between the sectors can be characterised as one of missed opportunities.

Further research.

The thesis has raised several matters which lead to considerations about further research to reinforce the thesis. Firstly, the review of institutional structures, policy and outcomes in chapters three to eight was pitched at a national level, although the examples of positive outcomes were limited. The most notable were

² Metrolink has been extended subsequently by GMPTE with the route through Salford Quays to Eccles being fully open in 2000. However as this is 'retro-fitted' it is a convoluted and slow running line.

new town and new town station location, developments around major stations, and developments in PTE areas. Further research could take a small sample of these and to 'drill down' for more detailed, case study analysis. This would begin by describing the development process for each subject, and then identifying chronologies, key actors, key documents and local policy constraints for the planning and railway sectors. Archival research would seek to go beyond official reports and the like, in order to get inside the process of policy and project development. This would necessitate access to letters, memoranda, and notes of meetings. For BR these may well exist within the Public Record Office, but access to such documents for local authorities may be more problematical: for subjects within the past twenty years it could be possible to supplement such documentary research by qualitative interview work with key actors. Detail analysis would seek to determine the extent to which the desire to maximise access to railway services informed the process, as opposed to other factors such as maximisation of revenue, opportunism, or general renewal policies. The selection of the case studies would be informed by, the need to review a selection of the situations where outcomes were positive, and the availability of the necessary archival material.

A second opportunity for further research is with regard to further testing of the hypotheses. The Manchester conurbation was selected as it represented the 'critical case', it was normative rather than being atypical. An alternative approach would be to select several atypical areas for case study and testing of the hypotheses. For example, three cases could be Glasgow, Sheffield, and a non-PTE area. Glasgow and Sheffield are both PTE areas and the research has shown that positive outcomes were more likely to occur in such areas. But Glasgow is atypical because its inherited railway network was more extensive than other conurbations, it received more investment over a longer period, and its historic population densities were relatively high. The potential for positive outcomes of the relationship between the planning and railway sectors would seem to be relatively high therefore. Sheffield, on the other hand, was a conurbation where, historically, the passenger railway played a relatively minor role in the development of this industrial city and, post 1974, it was several years before the PTE began supporting local railway services. Sheffield would therefore seem to be a conurbation where the likelihood of positive outcomes was rather less than in other conurbations with a PTE. A third area could be an emergent conurbation, probably in the South East, where there has been no PTE, but the rate of economic growth and its associated levels of road traffic congestion and property development, nevertheless, potentially created opportunities for a positive relationship between the planning and railway sectors. Conurbations

which offer potential are Portsmouth-Southampton and Ipswich-Colchester, both of which appeared in the Strategic Plan for the South East and experienced significant improvements in their railway services.

A third opportunity for further research would be to compare and contrast British experience with that in other European countries. The case of Stockholm, as a medium sized city, is an interesting one for this thesis (Hall, 1988, 308-312) (Cervero, 1995): the General Plan of 1945-52 produced by Sven Markelius was a grand one, a sort of combination of the Abercrombie and Inglis plans for the Clyde Valley. It involved the development of four satellite towns where there would be local employment and commuting into central Stockholm. The satellites were to be linked to the centre by a new underground railway, and high rise housing developments were placed at the metro stations to ensure that the maximum number of people lived close to them. The satellite towns have not been without their problems of the type all too familiar in Britain, nevertheless:

..... his grand design has stood the test of time: despite the critics, Stockholm works better, and has more effectively reconciled the conflict between car and urban environment for a longer period, than most other cities (Hall, 1988, 312).

In terms of overall population and geographical extent, Stockholm is comparable to British provincial conurbations, so research to compare specific outcomes in Stockholm with similar situations in Britain, and exploration of the reasons behind the identified differences, would deepen understanding of the British experience.

Paris, which is at the heart of an urban area comparable with that of London, was experiencing similar pressures with regard to the need for urban renewal in the early 1960s. In 1961 President de Gaulle initiated production of a strategic plan for the whole Ile de France region. Planners calculated that even if growth targets in provincial cities were achieved, the Paris region would grow from 9 to between 14 and 16 million by the end of the century. Various strategies were considered, including self-contained new towns, but were all rejected. Instead, a plan like Markelius' for Stockholm was adopted, but on a huge scale. Paris would have eight new towns of between 300,000 and 1,000,000 population each. They were to be linked with the centre and with each other not only by orbital highways but by a new express, standard gauge transit system, the Reseau Express Regional (RER): a network of 160-miles was planned. Not only would it service the new towns but also new, inner-urban centres which would act as catalysts for urban renewal in the run down, middle ring of the Paris region: development of the largest centre, La Defense, had already started when the plan was being prepared and was integrated into the strategy (Hall, 1988, 312-315). There is an interesting and relevant

resonance here with experience in London: the location of new towns on radial railways, the opening of Thameslink, the Docklands experience. Selective and carefully designed comparative research between London and Paris would also deepen understanding of British experience³.

A fourth opportunity for further research is with regard to experience with the relationship between heavy rail, the old street tram systems, modern light rail systems, and the overall relationship between them and land-use planning. Insights into the sorts of things which a multi-modal Buchanan report could have produced can be gleaned from a consideration of German and Swiss practice. Leibbrand (1970, first published 1964) is a useful point of departure as he articulated principles and practice which were contemporary with Buchanan. He too emphasised the importance of city centres:

The city core is and remains the centre of gravity which determines the life of a city and the traffic pattern within it. It is the magnet which exerts an economic and political pull throughout an even larger region. It is an intellectual and commercial meeting point. This heart of the city must be kept healthy (1970, 85).

Leibbrand noted the historical character of city centres and the implications for them of over-reliance on the car and road building. But he also noted the dangers of too negative a stance towards road traffic which could undermine economic well-being by causing the flight of business to more accessible suburbs. The answer was to plan the urban street network and the public transport network in a unified manner: in Germany the latter included trams, buses and railways. Leibbrand was aware of the potential of railways and of their problems which needed to be overcome:

The future of the railways does not lie only in long-distance expresses but also in mass transport over short distances. Plans for bringing suburban rail services further into the cities, such as have been evolved for Zurich, Munich, Stuttgart and Frankfurt, are basically right.With increasing congestion on the roads the advantage of a segregated track, making it possible to maintain a high average speed, is more and more evident. But in many places interchange with road transport, bus and car, remains a problem. Uncomfortable mixed-mode travel, with long waiting times and tiresome methods of payment, frightens away some travellers (1970, 201).

In what, to British eyes, is a fascinating glimpse of what might have been, Leibbrand also had a section dealing with the need to create reserved lanes for buses and trams. Where these crossed busy intersections it would be necessary to put them underground which, with regard to tramways, meant that:

³ More far reaching international comparative study could review experience in countries such as Japan where, owing to different institutional, ideological and political contexts and greater population density, centralised planning and management of the railway network has, nevertheless, been

...there is no very sharp distinction to be drawn between the underground tramway and the underground railway... (1970, 207).

This concern for the historic quality of city centres coupled with recognition, as a basic principle, that provision for both the car and public transport should be considered together, was the conceptual basis for the systems of U-bahns, S-bahns and surface running light rail systems that were subsequently developed in German and Swiss cities. Further analysis would provide a valuable template against which to measure British experience.

The research results and the contemporary British situation.

It is generally accepted that the motivations behind the privatisation of BR were the desire of the Major Government to be perceived as continuing the Thatcherite agenda of rolling back the state, and the medium term goal of reducing the burden on the Treasury. The expectation was that use of the network would continue at more or less the same level as at privatisation which, because of the continuing increase in road traffic, implied further relative decline. The form that privatisation took, with separation of ownership of the fixed infrastructure from ownership of trains, went against historical precedent as railway companies had previously been vertically integrated organisations, whether in private or public ownership. This is not the place to explore the complexity of, or arguments around, these institutional structures for the railways (Harris and Godward, 1997), but a significant outcome is that the relationship between the railway and planning sectors has become very complex, owing to changes in both sectors. The product of this research has relevance to the analysis of this relationship and for informing the design of new research to develop better understanding of it: two examples will demonstrate this.

The first is with regard to institutional arrangements. The separation of infrastructure from train operation has created a problem over where the locus of interest lies with regard to land development and its impacts on railway utilisation. Is this a matter for Railtrack as monopoly owner of the fixed infrastructure, or for the train operating companies who actually manage most of the stations on Railtrack's behalf and have the prime interest in promoting passenger growth? The post-privatisation period has had strong similarities with the post-grouping and post-nationalisation periods in that the gaze of the industry was forced inwards as the impact of deep organisational change was digested: as Fiennes noted, 'when you re-

associated with significant volumes of high density development at rail nodes (Hoyle and Knowles, 1998, chapter 4)

organise you bleed' (1967, 113)⁴. This has meant that it has taken several years for the industry to begin to consider its external relationships

With regard to land-use planning, the post-1994 period has seen a good deal of change too: the most significant for the relationship with the railway network has been Welsh and Scottish devolution and the reinforcing of the regional tier in England. The latter has included an upgraded role for Regional Planning Guidance and the creation of regional assemblies and statutory Regional Development Agencies. The thesis has shown the significance of this regional dimension to the relationship between the planning and railway sectors so its reinforcement is, potentially, a good thing for railway oriented planning. However, the difficulties within the railway sector mean that the two sectors have not been engaging as well as they might. The insights gained into these matters during the thesis have facilitated their consideration with regard to the Manchester conurbation and the product of this has been published (Haywood, 1999). The Labour Government elected in 1997 considered that Railtrack was not acting strategically in the public interest and has created the Strategic Rail Authority (SRA) to exercise this role.

These institutional problems would matter less if the decline of the railway network had continued as expected. But, on the contrary, there has been a surge in rail traffic: passenger kilometres increased from 30.0 billion in 1995/96 to 38.5 billion in 1999/00 and rail freight increased from 15.1 billion tonne kilometres in 1996/97 to 18.4 in 1999/00 (DETR, 2000). This growth seems to be a product of a buoyant economy, and in that sense is a re-run of the late 1980s railway renaissance, but also there is a suggestion that road traffic congestion is actually forcing some car drivers and freight customers to use rail. In addition the Government has developed a bundle of transport policies, since publication of their transport White Paper (DETR, 1998)⁵, which seeks to reduce society's dependence on the car and lorry and to transfer traffic to rail. The recently published Ten Year Plan (DETR, 2000) envisages 50 per cent growth in rail passenger traffic and 80 per cent growth in freight.

The research has shown that there has been a longstanding separation between railway management and the land development process, as exemplified by the general case that railway companies have not engaged in extensive land development activities. It is hardly surprising therefore that the complex structure of

⁴ The Southall and Ladbrook Grove accidents have been cited by critics as evidence that the complexity of the privatised industry has led to erosion of the safety culture which is such an important internal priority for the industry, suggesting that the efficacy of external relationships is likely to have been very poor.

the privatised industry has made this aspect of the external relationships of railway companies more difficult. However, the SRA can be perceived as a sort of 'super PTE' charged with a duty, amongst many others, to work at the interface between the railway and planning sectors. Its creation should therefore be welcomed. It is reassuring, too, that its organisational structure is being expanded to include a planning function, and a special body has already been created to secure the safeguarding of remaining disused railway land which, in the new context of growth, may well be returned to rail use. It will be crucial to ensure that the SRA receives all party political support and is not abolished if a Conservative government is elected at some future date. It will be particularly important for the SRA and Railtrack to work together to develop a national and regional perspective on the management and development of the railway network, in order to provide a consistent and coherent view that planning policy documents can incorporate and relate to.

It is notable too that despite abolition of the metropolitan counties, bus deregulation, and bus and rail privatisation, the PTA/PTE structure remains intact. The research identified the significance of their role at the interface between the planning and railway sectors and this is being enhanced as a result of the new policy agenda and the creation of statutory Local Transport Plans. PTA/PTEs are centrally involved in railway passenger franchising, in investing in local networks, in developing light rail systems, and in liaising with local land-use planning authorities. However, there is clearly a case for considering whether or not the PTA/PTE model should be extended to other conurbations, given the changes in Britain's urban structures over the past thirty years. The research has shown that the 'shire' counties achieved a great deal in terms of promoting rail, but extension of the PTA/PTE model could yield more. Conurbations which, potentially, should benefit from this would be Cardiff and the Valleys, Bristol-Bath, Portsmouth-Southampton, Nottingham-Leicester-Derby.

But the product of the research suggests that it may be necessary to think more expansively as the regional tier of planning produced significant results throughout the period, even though it was non-statutory. The research cited above on Manchester, identified the significance of this and noted Continental practice where regional governments are increasingly involved in developing their railway systems. This suggests that if this becomes a statutory tier in England, then the PTA/PTE role could gravitate to that level. Research which evaluated railway-oriented planning

⁵ This is the first transport White Paper since 1977 and contains some interesting parallels with the content of that document which also expressed concern over continuing increases in road traffic and the impact of land use change in stimulating demand for transport.

policy in draft updates to RPG would show what is being achieved at present and inform the debate about further institutional change at this level.

Secondly, the research has highlighted the importance of CBDs and their major stations to the utility of the rail network. The CBD renaissance of the 1990s is, therefore, to be welcomed, as is the continuing development of urban design ideology around pedestrian access to stations, and developing stations and their environs. However the research leads to the view that there is need for a more sophisticated development of planning policy around stations than is included in the draft update to PPG 13 which is very generalised and talks about 'transport interchanges' rather than the specific attributes and land-use policy implications of different kinds of interchange. For example: stations can be characterised as 'origins' or 'destinations' and station development might include enhancing the role of existing stations, or building completely new stations. The latter might be parkways, or might be associated with new developments of one kind and another. Interchanges might be in city centres, or suburbs, or might be associated with airports or other development scenarios. These matters raise all sorts of transport and land-use planning issues, which may involve substantial policy conflicts. In a recent discussion document on green belt policy, the RTPI has already identified the fact that utilising rail corridors to create rail accessible developments leads to questioning of the resistance to development in green belts (RTPI, 2000). The research would certainly lead to support for that point of view.

Final conclusion.

Without labouring the point too far, this review of the current situation demonstrates that the product of the thesis has a currency which is of continuing value post-1994. This has already informed the design of successful research into the planning-railway interface (Greensmith and Haywood, 1999) and can continue to do so for the foreseeable future. Although the research itself has been immensely satisfying, it is comforting to know that it will have a continuing relevance.

PART FIVE

Postscript.

The 1948-94 period experienced immense change. British population increased from 49 millions to 56.75 millions. The economy was restructured with the decline of heavy engineering and manufacturing and the rise to dominance of producer services. The quality of people's lives was transformed from the greyness of austerity to a consumer society, characterised by mass home and car ownership.

The numbers of cars on the roads increased from 2 million to 21 million and personal mobility increased dramatically with fundamental changes in urban social geography, broadly described as 'counter-urbanisation'.

In an era characterised by such far reaching change the continuing relevance of passenger railways was, at first glance, remarkable. But railways were able to utilise new technologies whilst continuing to enjoy the competitive advantage derived from their ability to carry dense flows, swiftly, in narrow corridors, with a lesser land take and fewer negative impacts on adjacent areas than road based modes. This longevity leads to an important general conclusion with regard to the thesis subject matter: the opportunities to concentrate land development in railway corridors continued to occur many decades after the railways were built. This is because railways are high cost, fixed infrastructure and, once built, cannot be re-routed easily. The rider is that, once removed, they cannot be put back easily either. Similarly, although lumpy, high density developments may be built fairly quickly in the modern era, generally the pace at which city regions change, and grow, has been relatively slow. Many features which were important to rail utilisation a 100 years ago, such as the location of CBDs and stations within them, continue to be important to the present. The fact that modern industry and distribution facilities have been permitted to develop in locations remote from railways demonstrates the opposite effect, with the concomitant demise of rail freight.

The relationship between railways and urban form is therefore, essentially, a long term one and this makes the role of 'planning', in the broadest sense, and continuity and consistency in planning, all the more important. The overriding conclusion from the thesis is that continuity and consistency has not characterised the approach to the relationship between the planning and railway sectors in the 1948-94 period. There was an ebb and flow to the strength of the relationship between the sectors, with few periods when institutional arrangements, ideology, policy and the availability of capital for railway and property investment were all favourable, at the same time. The contemporary situation shows the

continuing difficulties: land-use and transport planning ideology is firmly pro-rail but, outside the South East, property markets continue to be road oriented, whilst the management function within the railway sector is balkanised and pre-occupied with fundamental internal problems associated with delivering a safe and efficient railway. This thesis demonstrates the historic significance of the opportunity which currently exists to achieve closer and longer lasting relationships between the sectors than those resulting from the previous high water marks of 1948, 1968 and 1988. However, there is much to do if the opportunity is to be seized.

Appendix One

Fifth Report from the Select Committee on Railways, 24 May, 1844.

This report contains statements which set out the basis of the case for greater State involvement in the development of railway schemes in order to protect the public interest. These demonstrate the concerns of Gladstone and others over the unbridled operation of *laissez-faire* principles giving rise to circumstances where railways were being proposed to take business away from an existing company or to block a legitimate extension scheme. The Report sets out the circumstances under which a railway project would merit special consideration and goes on to set out the main matters to which the Board of Trade should have regard when considering railway schemes submitted to it in advance of their consideration by Parliament.

'The Committee will now endeavour to sum up the results at which, from the examination of this part of the subject referred to them, they have arrived.

1. In cases where it is proposed to push new Lines of Railway into districts not at present within the circle of Railway Communications, the main questions for consideration will ordinarily be simple, and require no detailed notice from the Committee.
2. In cases where Branch lines are proposed with a view to the more convenient connexion of a particular town and district with the subsisting railway, and not with a view to the formation of any new line of ulterior communication, the same observations will apply.
3. In cases where it is intended to form, either at once or piecemeal, new Lines of Communication, which are to compete with subsisting Lines, there should be an examination of each scheme with respect to the amount of increased facilities which it is intrinsically calculated to give to traffic, either terminal or intermediate.

If they be considerable, they tend to show both that the railway will be made and worked, and likewise that when made and worked, it will be beneficial.

If, on the other hand, they be insignificant, it should be considered whether the projected railway is one which, if it is to remunerate the projectors at all, can only

remunerate them by means of the abstraction of traffic which is already, for all substantial purposes, equally well accommodated by some existing railway; and if so, it ought to be further considered whether, upon the whole, it is for the Public interest that the new Scheme should be discouraged, provided such existing Company be willing to tender to the Public favourable engagements, whether by way of increase of accommodation, of reduced charge, of accession to the conditions under which it has been proposed by the Third Report of this Committee to place all new Railways, or otherwise, together with adequate guarantees for the fulfilment of such engagements. And, on the other hand, if no such engagements be tendered by the existing Company, with whose traffic the projected railway might be likely to interfere, then, what particular conditions should be imposed upon the new Company, and what guarantees could be taken for the execution of its works, in the first instance, and subsequently, for its continuing to work the line, in conformity with the terms to which it has acceded.

All these matters would form part of the Report of the Public Department.

.....In recommending, therefore, that Railway Bills be submitted to the Board of Trade previously to their coming under the notice of Parliament, the Committee conceives that that Board (or such other public department as may be entrusted with the care of railway matters) might advantageously examine these Bills, with regard to the following subjects :

1. All questions of public safety.
2. All departures from the ordinary usage of railway legislation, on points where such usage has been sufficiently established.
3. All provisions of magnitude which may be novel in their principle, or may involve extended considerations of public policy. For example, amalgamations and agreements between separate companies; extensions of capital; powers enabling the railway Companies to pursue purposes different in kind from those for which they were incorporated; modifications of the general law.

4. Branch and Extension Lines, in cases where upon the first aspect of the plan, a presumption is raised that the object of the scheme is to throw difficulties in the way of new, and probably legitimate enterprises.

5. New schemes where the Line taken presents a strong appearance of being such as to raise the presumption that it does not afford the best mode of communication between the termini, and of accommodating the local traffic.

6. Cases where a Bill of inferior merits may be brought before Parliament, and where a preferable scheme is in *bona fide* contemplation, although not sufficiently forward to come simultaneously under the judgement of Parliament according to its Standing Orders.

7. Any proposed arrangements with subsisting Companies which may appear as objectors to new Lines' (SC, 1844).

Appendix Two

1845 : Report of the Railway Department of the Board of Trade on the Kentish and South Eastern Railway Schemes.

In this report Dalhousie's board set out the principles by which it was to be guided in its consideration of the many railway schemes placed before it;

“The list of schemes in this district shows that on the one hand a very extensive and comprehensive system for the accommodation of the whole Kentish and South Eastern district, is proposed by the South Eastern Company, in connexion with their existing lines; while, on the other hand, the same or nearly the same objects are proposed to be attained by a number of new and independent schemes.

“This renders it necessary that we should begin by an explicit statement of the principles which have guided us, in this and similar cases, in forming an opinion whether a preference ought or ought not to be given, and if given, under what conditions and to what extent, to lines for completing the accommodation of particular districts, which lines are in connexion with existing Railways in those districts.

“In this, as in every other case, we have endeavoured to keep steadily in view the attainment of the greatest amount of public advantage. We have not recognised the existence of anything like a vested right in existing Companies to be protected from the same description of competition which they have themselves inflicted on canals and other existing modes of communication. Beyond, perhaps, a bare preference, in cases of absolute equality, due to the interests of shareholders, who themselves constitute a portion of the Public, we have not considered that an existing Railway Company could claim any preference over other parties proposing to effect the same objects, beyond that which might result from an identification of interest with the Public.

“Considering the subject in this point of view, it appears to us that, as a general rule, the most important point for the interests of the Public, is to secure the best permanent lines of Railway communication for the country at large and for the wants of the district. To sanction an inferior or unnecessarily circuitous line proposed by an existing Company, or to reject one of decided public and local advantage, proposed

by a new Company, for the sake of any terms that could be offered by an existing Company, would, in our opinion, be, except under peculiar circumstances, unfair towards the local interests thus sacrificed, and unwise as regards the general and permanent interests of the Public.

“We have, therefore, as a general rule, considered it as an essential preliminary requisite, before entering upon the question of giving protection to existing Companies by allowing them to complete the Railway communications of particular districts, that the lines proposed by them shall be, in all substantial respects, sound in themselves, and not inferior to those proposed by other parties.

“Assuming this to be the case, the question is at once raised whether the public are likely to derive most benefits from competition, or from arrangements with the existing Company.

“With regard to the general principles which regulate competition in the case of Railways, we have little to add to the Reports of the Select Committee on Railways of last Session, by whom the subject was fully investigated. The Committee state, in their Fifth Report:-

“ ‘With regard to the check of competition by Railways among themselves, the Committee cannot in all cases repose implicit faith in it’.

“ ‘When the lines are very short, the probability is that unless charges be moderate, road traffic will revive, and in such cases the Public have a great degree of security. Again, as respects the carriage of goods, it is found in practice that by other channels of conveyance, such as canals, an effective control may, under certain circumstances, be placed upon Railway charges. But in considering the case of passenger charges, and in all classes of lines, except those which are so short as to be effectually checked by the ordinary road, the Committee think that little can be permanently expected from the mere multiplication of Railways, in the way of security for moderation of charge. There may be, indeed, indirect and accidental competition between Railways, which may cause cheapness, and there may even be direct and brisk competition, with great reductions of fare, for short periods. But in such cases of competition, somewhat modified, as have hitherto occurred, the result has generally been increase of charge by mutual arrangement or positive

amalgamation of the competing Companies. The experience of the past is, however, limited, and might not, if taken alone, warrant any conclusive opinion; but in looking to the nature of the question itself, the Committee feel this difficulty, that they cannot, in case of Railways, anticipate any such facilities in the introduction of new competitors as to check the proceedings of the Companies actually in possession of the traffic; that in fact there is no district in which the traffic will support any considerable number of Railways; that there is no case in which they can imagine a likelihood of more than two, or at the very utmost, three lines of Railway communication, which could be so situated as to compete with one another, and they cannot conceive that two bodies, or even three, acting by compact executive Boards, and secure against the entrance of any other party into the field, will fail to combine together. It is, therefore, their apprehension, that in such cases, either the different Railways will continued to be worked, and then that extreme measures will be taken in concert for the purpose of paying very moderate dividends, and it may be found that several capitals have been expended for performing the business which could have been equally well, or perhaps even better performed by one; or a closer combination will take place among the Companies: they will choose the line upon which they can most profitably carry the traffic, and will leave the rival line or lines unoccupied'.

"The principle here stated, that competition loses more or less of its value as a security for the Public, when from the nature of the case it is limited to two or three parties, who are constantly urged by mutual interest to combine, has received abundant corroboration from the experience, of what has already taken place in the history of Railways.

"The following instances may be mentioned where Railway Companies, in a situation to compete, have, after a short time, either amalgamated or combined together, so as to put an end to competition:

"The Leeds and Selby with the York and North Midland; in this case the former line being virtually for several years shut up.

"The Birmingham and Derby with the Midland Counties.

"The Chester and Crewe with the Grand Junction.

"The Manchester and Birmingham with the Grand Junction.

"The Bolton and Preston with the North Union.

“The Northern and Eastern with the Eastern Counties.

“On the other hand, we are not aware of a slight instance which can be pointed out, in which the Public are now deriving any benefit from direct competition between two railways.

“In addition to the instances of combination between directly competing Companies, recent experience has furnished numerous instances of the tendency of smaller lines, originally sanctioned as independent undertakings, to resign their independence into the hands of powerful neighbours. We may mention, among other instances of this tendency, the amalgamation or lease of the Sheffield and Manchester to the Midland and Manchester and Birmingham.

“Of the Bristol and Exeter, and Cheltenham and Great Western, with the Great Western.

“Of the Hull and Selby, and Manchester and Bolton, with the Manchester and Leeds.

“Of the North Union with the Liverpool and Manchester and Grand Junction.

“Of the Greenwich with the South Eastern.

“Of the Sheffield and Rotherham with the Midland.

“Of the Chester and Birkenhead with the Chester and Holyhead.

“Of the Bristol and Gloucester with the Birmingham and Gloucester.

“Beside others that might be quoted.

“The same principle has received further elucidation from the inquiries of Parliamentary Committees on former occasions as well as from the great body of evidence collected by the Commissioners of Inquiry into the Sanitary Condition of Large Towns, in regard to the operation of the principle of competition as compared to that of well-regulated monopoly in the analogous cases of Water and Gas Companies. Indeed it is too evident, as a general proposition, to be disputed; although great caution may be required in its application and in discriminating those cases where the competition is of a pure and simple nature, such as must eventually lead to a compromise, from those where a certain degree of indirect and incidental competition may exist, from which the Public may expect to derive lasting benefit, either in the shape of reduction of charge or of extension of accommodation.

“When an existing Railway Company proposes schemes which, although only partially sufficient for the full accommodation of the district, may yet be sufficient to prevent other parties from entering the field with further or improved projects in that district, the arguments against the creation of a monopoly acquire additional strength. The simpler case is, when, as in the present instance, the existing Company comes forward with a complete and comprehensive scheme, and the question is reduced to this: whether the existing Company is able and willing to offer guarantees for the public advantage superior to any that can be afforded by a new Company.

“Of the ability of the old Company to offer such guarantees there can, generally speaking, be little doubt.

“Istly. An established Company, which has a valuable property and large available income independent of the new scheme can, of course, offer a guarantee for the fulfilment of all that it undertakes to accomplish greatly superior to that of any new Company, however respectable.

“This consideration derives great weight from the experience which has been already afforded of the failure of many new Companies to accomplish the objects for which they were incorporated. We need only refer to the instances of the Eastern Counties Company, which was incorporated as a line from London to Norwich, and has never yet been carried beyond Colchester; of the Northern and Eastern, which for many years stopped short of Cambridge; and of the Great North of England, which abandoned the portion of its line between Darlington and Newcastle.

“2dly. The traffic of a system of lines connected with one another, can always be worked more economically and conveniently under one uniform-management than by independent Companies. The Company which works the main trunk line, and possesses the principal terminal stations, can run more frequent trains, and make better arrangements for forwarding traffic of the cross lines, than it could afford to do if two or three separate establishments had to be maintained, and the harmony of arrangements depended on two or three independent authorities. Under such circumstances a conflict of feeling and interest has almost inevitably grown up, from which the Public has suffered the most serious inconvenience. When the traffic is large, this conflict has frequently led not only to increased inconvenience, but to

increased danger: and where the terminus or a portion of the rails of one Company have been common to the other, these results have been greatly aggravated.

“3dly. An established Company can always, if so disposed, offer guarantees and advantages for a greater extent of Railway than the new Company, viz., for the existing as well as the projected lines. When the existing Company is already in possession of the principal trunk of the district, the advantage of securing such guarantees for the whole system, rather than for only a small portion of it, is rendered more apparent.

“The Select Committee of last Session, for reasons which are fully stated in their report, attach great importance to the obtaining of guarantees from existing Companies, by voluntary arrangements similar to those which they recommended, and which Parliament subsequently adopted in the case of new Railways, and expresses a strong hope, ‘that among the existing Companies there may be those which will be disposed to accede to arrangements, resembling, in their general principle and effect, those which are now proposed for new Railways’.

“4thly. Whatever guarantees may be thus offered by existing Companies, possess the double advantage, as compared with similar offers from new Companies, of coming into immediate operation, and of being more certainly rendered effectual. An offer from a new Company to bind itself to charge fares considerably lower than those usual upon other lines, might readily be made, in the hope of thereby securing their Bill; but the fulfilment of it would depend almost entirely upon the eventual success of the line, and its ability to perform its engagements. No Act of Parliament could compel an insolvent concern to carry at as low rates and afford as ample accommodation as a prosperous undertaking might be able to do. A moderate offer from an established Company, who can be relied on to fulfil their engagements, is therefore preferable to one apparently more advantageous from a new Company.

“For these, among other reasons, we conclude that the policy indicated by the Committee of last Session, of giving preference to the schemes of existing railway companies for supplying their own districts, when such schemes are as good or better than those of any other parties, where no special reasons exist which should induce us to look for advantage from competition, and where the old Company voluntarily offers such guarantees as may reasonably be required to protect the

Public against the possible abuses of monopoly, or such conditions as at once place the Public in a better position than they could hope to obtain from competition, is that from which the greatest amount of permanent public advantage is likely to be derived.

“We by no means intend these principles to be considered as rules of universal application, being satisfied that no abstract or invariable rule can be safely laid down by which to decide cases of such complexity; and varying so greatly in detail; but we have thought it desirable to state thus generally the views which have guided us in cases like this of the South Eastern district, and upon which the soundness of the conclusions at which we have arrived must mainly depend.

HC, 1845, Vol. XXXIX.203, pp1-4.

Appendix Three

Development of the London Underground network 1863 - 1994

<i>Railway company/Route</i>	<i>Year opened</i>	<i>Railway company/ Route</i>	<i>Year opened</i>
Metropolitan *		Metropolitan District *	
Farringdon to Paddington	1863	Kensington High Street to Westminster	1868
Paddington to Hammersmith	1864	Gloucester Road to West Brompton	1869
Farringdon to Moorgate	1865	Westminster to Blackfriars	1870
Baker Street to Swiss Cottage	1868	Earls Court to Hammersmith	1874
Paddington to Kensington	1868	Hammersmith to Richmond	1877
Swiss Cottage to Harrow-on-the-Hill	1880	Turnham Green to Ealing Broadway	1879
Harrow-on-the-Hill to Rickmansworth	1887	Acton Town to Hounslow West	1884
Rickmansworth to Verney Junction	1894	Inner Circle Completed	1884
Farringdon/Baker Street to Uxbridge	1905	Putney Bridge to Wimbledon	1889
electrification			
Baker Street to Hammersmith	1906	Whitechapel to Upminster	1902
electrification			
Rickmansworth to Watford	1925	Ealing Common to South Harrow	1903
Wembley Park to Stanmore	1932	Electrification to Hounslow, Ealing, Wimbledon, Richmond and East Ham	1905
Rickmansworth to Amersham/Chesham electrification	1960	Electrification to Barking	1908
		South Harrow to Uxbridge	1910
		Barking to Upminster	1932
Waterloo and City		Great Northern and City Railway	
Waterloo to Bank	1898	Finsbury Park to Moorgate	1904
East London Railway *		Northern Line	
Whitechapel to New Cross	1884	(Hampstead Line)	
Shoreditch to New Cross electrification	1913	Charing Cross to Golders Green with branch from Camden Town to Archway	1907
Northern Line (City and South London Railway)		Charing Cross to Embankment	1914
Stockwell to King William Street	1890	Golders Green to Hendon	1923
		Hendon to Edgware	1924
Moorgate to Clapham Common	1900	Embankment to Kennington	1926
Moorgate to Angel	1901	Archway to High Barnet	1940
Angel to Euston	1907	Finchley Central to Mill Hill East	1941
Euston to Camden Town	1924	Central Line	
Clapham Common to Morden	1926	Shepherd's Bush to Bank	1900
Bakerloo Line		Shepherd's Bush to Wood Lane	1908
Baker Street to Elephant and Castle	1906	Bank to Liverpool Street	1912
Baker Street to Marylebone and Edgware Road	1907	Wood Lane to Ealing Broadway	1920
Edgware Road to Paddington	1913	Liverpool Street to Stratford	1946
Paddington to Willesden Junction	1915	Stratford to Leytonstone	1947
Willesden Junction to Watford Junction	1917	North Acton to West Ruislip	1947
Baker Street to Stanmore	1939	Leytonstone to Woodford (direct)	1947
Piccadilly Line		Leytonstone to Newbury park	1947
Hammersmith to Finsbury Park	1906	Victoria Line	
Holborn to Aldwych	1907	Walthamstow to Victoria	1968
Hammersmith to South Harrow	1932	Victoria to Brixton	1971
Finsbury Park to Arnos Grove	1932	Jubilee Line	
Acton Town to Hounslow West	1933	Baker Street to Charing Cross	1979
Arnos Grove to Cockfosters	1933	Green Park to Stratford	1999
South Harrow to Uxbridge	1933		
Hounslow West to Heathrow	1977		

* originally built as steam operated railways

SOURCES: D.F. Croome, A. Jackson, *Rails Through the Clay: A History of London's Tube Railways*, Harrow Weald, Capital Transport, 1993. J. Glover, *London's Underground*, London, Ian Allan, 1991. A. Jackson, *Semi-Detached London*, Didcot, Wild Swan, 1991.

Appendix Four

Southern Railway Company*/BR Southern Region electrification : 1900-1994

Route	<i>Year opened for electric services</i>
London Bridge - Victoria **	1909
Victoria - Crystal Palace **	1911
Waterloo - Wimbledon	1915
Waterloo - Kingston - Waterloo Loop	1916
Waterloo - Shepperton	1916
Waterloo - Hounslow Loop	1916
Waterloo - Hampton Court	1916
Victoria/Holborn Viaduct-Orpington via Herne Hill/Shortlands	1925
Victoria/Holborn Viaduct-Catford Loop/Crystal Palace	1925
Waterloo-Guildford/Dorking South	1925
London Bridge/Victoria-Extensions to Coulsdon North/Sutton via Selhurst	1925
Charing Cross layout major works	1925
Cannon Street major works (temp. closure)	1926
All AC converted to DC	1929
Hounslow/Feltham-Windsor	1930
Wimbledon-West Croydon	1930
Dartford-Gravesend Central	1930
London-Brighton/Worthing	1933
London-Eastbourne/Hastings via Lewes	1935
Bickley/Orpington-Sevenoaks	1935
Waterloo-Portsmouth via Guildford	1937
Woking-Alton	1937
Staines-Weybridge	1937
London Bridge/Victoria-Portsmouth via Horsham	1937
Three Bridges-Horsham	1938
West Worthing-Ford (Sussex)	1938
Littlehampton-Bognor Regis Branches	1938

Route	Year opened for electric services
Motspur Park-Leatherhead via Chessington	1938
Sevenoaks-Hastings/Bexhill	1939
Strood-Maidstone	1939
Gravesend/Swanley-Gillingham	1939
Aldershot-Guildford	1939
Ascot-Aldershot	1939
Staines-Reading	1939
Gillingham-Ramsgate/Dover (Kent Coast electrification)	1959
Maidstone-Ashford (Kent Coast electrification)	1961
Sevenoaks-Ashford-Folkestone-Dover-Deal-Ramsgate (Kent Coast electrification)	1962
Woking-Bournemouth	1967
Ryde-Shanklin	1967
Tonbridge-Hastings	1986
Sanderstead-East Grinstead	1987
Branksome-Weymouth	1988
Portsmouth-Southampton-Eastleigh	1990

** and corporate predecessors*

*** Originally electrified with the AC overhead catenary system, later converted to the Southern Railway third rail system.*

Sources:

G.T. Moody, *Southern Electric*, 1909 - 1979, London, Ian Allan, 1979.

Thrower T., 1998, *Electrification: dead in its tracks?*, *Rail*, 334, pp 22-27.

Appendix Five

British railways electrification

Appendix Five A : suburban electrification outside the Southern Railway/BR Southern Region: 1900-1994

<i>Route*</i>	<i>Date of opening of electric services</i>
Seaforth-Dingle (Liverpool Overhead Railway)	1893
Liverpool-Birkenhead (Mersey Railway)	1903
Liverpool-Southport	1904
Newcastle-Tynemouth	1904
Manchester-Bury	1916
Richmond-Broad Street (North London Railway)	1916
Bury - Holcombe Brook (closed 1951)	1918
Euston/Broad Street-Watford	1922
Lancaster-Morecambe/Heysham (experimental system)	
Manchester-Altrincham	1931
Birkenhead-West Kirby/New Brighton	1938
Liverpool Street-Shenfield	1949
Manchester London Rd - Glossop/Hadfield	1954
Shenfield-Southend	1956
Liverpool Street -Hertford East/Chingford/Enfield Town/Cheshunt	1960
Glasgow Queen Street- Helensburgh/Balloch/Milngavie	1960
Glasgow Queen Street- Bridgeton/Airdrie	1960
Fenchurch Street-Southend	1961
Glasgow Central-Cathcart/Paisley	1962
South Tyneside de-electrified	1963
Paisley-Gourock/Wemyss Bay	1967
North Tyneside de-electrified	1967
Lea Valley-Cheshunt	1969
Kings Cross/Moorgate-Welwyn/Hertford North	1976
Hertford/Welwyn-Hitchin/Royston	1977
Liverpool-Kirkby	1977
Liverpool-Garston	1977
Rutherglen-Central-Partick (Glasgow Argyle Line)	1979
Liverpool Street -Gidea Park	1980
Stockport - Hazel Grove	1981
St Pancras-Bedford	1982
Garston-Hunts Cross (Liverpool)	1983
Wickford-Southminster	1986
Ayrshire to Ardrossan/Largs	1987
Thameslink	1990
Hooton-Chester/Ellesmere Port	1993
Leeds-Bradford/Skipton/Ilkley	1995
Paddington-Heathrow	1998

* all routes electrified before 1950, except the Lancaster-Morecambe/Heysham scheme used DC current: most were subsequently converted to AC
Sources: Creer, 1986, Glover, 1985, 1987; Heaps, 1988; Thrower 1998.

Appendix Five B : main line electrification outside the Southern Railway/BR Southern Region: 1900-1994

<i>Route*</i>	<i>Date of opening of electric services</i>
Wath/Sheffield-Manchester (DC system)	1952
Shenfield- Colchester- Clacton/Walton	1959
Crewe-Manchester (WCML)	1960
Crewe-Liverpool (WCML)	1962
Euston-Crewe WCML -Trent Valley)	1966
Rugby-Birmingham (WCML)	1967
Crewe - Glasgow (WCML)	1973
Wath/Sheffield-Manchester - closed	1981
Great Eastern to Cambridge	1987
Ipswich-Norwich	1987
King's Cross-Leeds (ECML)	1988
King's Cross-York-Newcastle-Edinburgh/Glasgow *(ECML)	1991
Cambridge-Kings Lynn	1991

* via Carstairs to Glasgow Central

Source: Sources: Creer, 1986, Glover, 1985, 1987; Heaps, 1988; Thrower 1998.

Appendix Six

The Control of Land Use: Cmd. 6537, Presented to Parliament by the Minister of Town and Country Planning and the Secretary of State for Scotland, 1944

Introduction.

1. Provision for the right use of land, in accordance with a considered policy, is an essential requirement of the Government's programme of post-war reconstruction. New houses, whether of permanent or emergency construction; the new lay-out of areas devastated by enemy action or blighted by reason of age or bad living conditions; the new schools which will be required under the Education Bill now before Parliament and under the Scottish Education Bill which it is hoped to introduce later this Session; the balanced distribution of industry which the Government's recently published proposals for maintaining active employment envisage; the requirements of sound nutrition and of a healthy and well-balanced agriculture; the preservation of land for national parks and forests, and the assurance to people of enjoyment of the sea and countryside in times of leisure; a new and safer highway system better adapted to modern industrial and other needs; the proper provision of air-fields – all these related parts of a single reconstruction programme involve the use of land, and it is essential that their various claims on land should be so harmonised as to ensure for the people of this country the greatest possible measure of individual well-being and national prosperity.

Appendix Seven

Barman: New standards for station design 1947

- a. Free and comfortable circulation planned as a result of scientific study of passenger movement; circulation unencumbered by luggage trolleys for which separate means of access will be planned.
- b. The various station and platform buildings grouped into compact and continuous blocks.
- c. Clearly distinguishable signs, illuminated where necessary, to guide and inform passengers at all points between their entering and leaving.
- d. Escalators to and from different levels, wherever the traffic is sufficient to justify their operation.
- e. Island platforms to allow direct interchange from one train to another, without climbing stairs.
- f. Full-length platforms to avoid double stopping, protected from the weather for most of their length, and fitted with windscreens to protect passengers from cold winds and draughts.
- g. Plentiful lighting in hours of darkness in all parts where passengers may tread.
- h. At very large stations, interesting and well-stocked shops in which last-minute shopping will become a pleasant experience.
- i. Shops, kiosks, automatic machines and advertisements arranged in compliance with a general station design and rigorously controlled so that order and dignity may never be lacking.
- j. Light, airy waiting rooms, well heated, well ventilated, welcoming in appearance, decorated in light, cheerful colours.
- k. Tea and coffee served in the waiting room, or in refreshment rooms next door.
- l. Bright, welcoming refreshment rooms and restaurants, with soft, intimate lighting, scrupulously clean underfoot, without advertisements, lined where necessary with absorbent materials that will reduce noise and clatter.
- m. The windows of waiting rooms, refreshment rooms, buffets and restaurants arranged so as to give a full view of platforms and trains.
- n. Lavatories lined with delicately coloured tiles and kept spotlessly clean at all hours of the day and night.

Source: Barman, 1947, 64.

Appendix Eight

Select Committee on Nationalised Industries, Report on British Railways, 1960, p xciii)

'What size and shape should British Railways be? The first consideration must be financial; the size and shape must be such as can enable the Commission to carry out their statutory task of balancing their accounts, taking one year with another. But if the Commission are to know which of their services are justifiable on grounds of direct financial return, they must first have some form of accounts by which the profitability of Regions and services can be judged.

However, the consideration of direct profitability is not the only one which applies in this case. Because of the cost of the roads, and of the congestion on them, the national interest may require railway services which do not in fact directly pay for themselves, but which may cost the nation less than the alternatives.

In some cases, there may be a third and different consideration - one of social need. A service may be justified on other than economic grounds, because for example the less populous parts of Britain might otherwise be left without a railway service. Account may, in other words, need to be taken of social considerations.

The consideration of profitability, mentioned above, should be left to the Commission. But if decisions are to be taken on grounds of the national economy or of social needs, then they must be taken by the Minister, and submitted by him for the approval of Parliament.

Furthermore, if Parliament is to specify that certain services should be undertaken, despite the fact that the Commission cannot profitably undertake them, then the additional cost of them should be provided, in advance, out of public funds.

If subsidies of this kind are to be paid to the Commission, then they should be paid for specific purposes, and they should be paid openly. They should not be disguised as, for instance, a payment of the track costs (which are an integral part of railway operations), nor as the writing-off of the burden of interest; and they should not be hidden away in the Commission's accounts.

The need for clarity in the accounts is important. Your Committee have suggested, at various points in this Report, that payments should be made to the Commission of appropriate sums from public funds. Provided that these payments relate to specific services dictated by the Minister, or are compensation for specific losses incurred by his actions, the Commission would be able to publish accounts for British Railways which would reflect only the matters within their control.

If this were done, there would be one important consequential advantage that both the Commission and the Minister would become much more clearly accountable to Parliament for their separate railway responsibilities.'

Appendix Nine									
The Railway Network: 1838 -1994									
	Length of British Rail Route		British Railways		British Railways			London	
	length of route (kilometres)	open to passenger traffic (kilometres)	passenger journeys (million)	passenger kilometres (billion)	goods lifted (million tonnes)	goods moved (billion tonne kilometres)	no. of stations	passenge journeys (million)	
1838									
1848	3582								
1858									
1868	13,565		322		169				
1878	15,563		596		236				
1888	17,281		796		304				
1898	29,783		1114		427				
1908	30,000		1265		522				
1918	32,420		2,064						
1928	32,565		1,250						
1938	32,081		1,237	30.6	270	16		49	
1948	31,593		1,024	37.0	277			72	
1958	30,333	23,621	1,090	35.6	247	30	4300*	69	
1968	20,080	15,242	831	28.7	211	23		65	
1978	17,901	14,396	724	30.0	171	20	2356	56	
1988	16,599	14,309	764	34.3	150	18	2418	81	
1994	16,528	14,317	745	31.7	122	15	2493	72	
Sources: DoT, Transport Statistics 1993/94* as quoted in Beeching 1963									
Data for 1838-1898 rounded from various secondary sources based on <i>Railway Returns</i>									

Appendix Ten				
New towns and the railway network: 1945-94				
Conurbation/new towns	date of designation	target population 1000s	revised target population 1000s	distance from conurbation centre miles
Greater London				
Stevenage	1946	60	80	30
Crawley	1947	50	85	30
Hemel Hempstead	1947	80	85	25
Harlow	1947	60	80	25
Hatfield	1948	29	29	20
Welwyn Garden City	1948	36	50	22
Basildon	1949	50	130	25
Bracknell	1949	25	60	28
Milton Keynes	1967	250	200	45
Peterborough	1967	190	150	72
Northampton	1968	300	180	66
Birmingham				
Telford	1963	90	150	30
Redditch	1964	90	84	14
Merseyside				
Skelmersdale	1961	80	61	13
Runcorn	1964	100	95	14
Greater Manchester				
Warrington	1968	200	170	18
Central Lancashire	1970	430	285	30
Tyneside				
Washington	1964	80	80	6
Glasgow				
East Kilbride	1947	100	90	9
Cumbernauld	1955	50	70	15
Livingston	1962	100	90	29
Development Areas				
Newton Aycliffe	1947	10	45	n/a
Peterlee	1948	30	30	n/a
Glenrothes	1948	95	70	
Cwmbran	1949	55	55	n/a
Irvine	1966	90	85	25
Newtown	1967	11	13	n/a
Other				
Corby	1950	40	70	80
Sources: Schaffer (1970), Dupree (1987), Hurst (1992), British Transport Commission (1956b), RDS (1998).				

Appendix Eleven

Town expansion and the railway network: 1951-94

<i>Greater London</i>	<i>Population 1961</i>	<i>Distance from conurbation centre miles</i>	<i>Station at designation</i>	<i>Station in 1994</i>
				<i>(date of closure/opening)</i>
Andover B	16,985	66	yes	yes
Ashford UD	27,996	54	yes	yes
Aylesbury B	27,923	40	yes	yes
Banbury B	21,004	72	yes - two	yes - one
Basingstoke B	25,980	47	yes	yes
Bletchley UD	17,095	47	yes	yes
Bodmin B	6,214	234	yes, General, North & Bodmin Road	yes, one Bodmin Road(Parkway)(1967)
Braintree and Bocking UD	20,600	43	yes	no
Burnley CB	80,559	205	yes - three	yes, two - Manchester Road reopened 1986
Bury St Edmunds B	21,179	75	yes	yes
Canvey Island UD	15,605	38	yes (Benfleet)	yes
Frimley and Camberley UD	28,552	30	yes	yes
Gainsborough UD	17,278	148	yes	yes
Grantham B	25,048	110	yes	yes
Haverhill UD	5,445	56	yes	no (1962)
Huntingdon and Godmanchester B	8,821	62	yes, one at each	yes (not Godmanchester)
Kings Lynn B	27,536	98	yes	yes
Letchworth UD	25,511	37	yes	yes
Luton CB	131,583	32	yes	yes
Luton RD	36,462	32		
Melford RD	13,317	60		
Mildenhall RD	20,458	71	yes	no (1962)
Peterborough B	62,340	81	yes	yes
Plymouth CB	204,409	211	yes	yes
St Neots UD	5,554	57	yes	yes
Sandy UD	3,963	49	yes	yes
Sudbury B	6,642	58	yes	yes
Swindon B	91,739	79	yes	yes
Thetford B	35,399	82	yes	yes
Wellingborough UD	30,583	68	yes	yes
Witham UD	9,459	40	yes	yes

Sources: BTC, 1956; Hall, 1973; Daniels & Dench, 1980; Hurst, 1992; British Rail National Timetable 1994; Jowett, 2000.

English provincial cities				
	Population 1961	Distance from conurbation centre miles	Station at designation	Station in 1994 (date of closure/opening)
Birmingham				
Aldridge-Brownhills	77,440	13	Yes - two	No (1962)
Banbury B	21,004	41	Yes one (one closure 1951)	Yes
Cannock UD	42,191	17	Yes	Yes - re-opened 1989
Daventry B	5,860	37	Yes	No (1958)
Droitwich B	7,976	20	Yes	Yes
Leek UD	19,182	50	Yes	No (1956)
Lichfield B	14,087	16	Yes - two	Yes - two
Lichfield RD	39,935	16		
Rugeley UD	13,017	25	Yes - two	Yes - two
Stafford B	47,806	27	Yes	Yes
Stafford RD	17,930	27		
Tamworth B	13,646	15	Yes - two	Yes - two
Tutbury RD	17,597	33	Yes	Yes
Uttoxeter UD	8,185	34	Yes	Yes
Weston-super-Mare B	43,938	108	Yes	Yes
Walsall				
Aldridge UD)	77,440	4	Yes	No (1962)
Brownhills UD)		6	Yes	No (1962)
Wolverhampton				
Cannock RD	42,191	8	Yes(1965)	Re-opened 1989
Selsdon RD	36,981	5	?	?
Tettenhall UD	14,867	3	No	No
Wednesfield UD	33,048	3	No	No

English provincial cities (cont)					
	Population 1961		Station at designation	Station in 1994	
		Distance from conurbation centre miles			(date of closure/opening)
Liverpool					
Burnley CB	80,559	51	Yes - three	Yes - see below	
Ellesmere Port B	44,681	10	Yes	Yes	
Widnes B	52,186	13	Yes	Yes	
Winsford UD	12,760	33	Yes	Yes	
Manchester					
Burnley CB	80,559	24	Yes - three	Yes - two - Manchester Road re-opened 1986	
Crewe B	53,195	34	Yes	Yes	
Macclesfield B	37,644	18	Yes	Yes	
Winsford UD	12,760	28	Yes	Yes	
Salford					
Worsley UD	40,393	3	Yes	No	
Bristol					
Keynsham	15,152	5	Yes	Yes	
Oldbury RD	44,884	12	Yes	No	
Northornbury RD	30,679	13	Yes	No	
Warmley RD	19,406	6	Yes	No	
Newcastle					
Wheaton Valley UD	26,095	5			
(Cramlington)			Yes	Yes	
Wombenton UD	46,530	9	Yes (1978)	Metro (1980)	
(Killingworth)			Yes (1958)	No	

Scotland				
	<i>Date of agreement</i>	<i>Station at designation</i>	<i>Station in 1994</i>	
				<i>(date of closure/opening)</i>
Glasgow				
Alloa	1959	Yes	No (1968)	
Alva	1963	No (1954)	No	
Arbroath	1959	Yes	Yes	
Barrhead	1963	Yes	Yes	
Bathgate	1963	No (1956)	Yes (1986)	
Bonnyrigg & Lasswade	1961	Yes	No (1962)	
Denny & Dunipace	1960	No	No	
Dumbarton	1963	Yes (two)	Yes(two)	
Dumfries	1962	Yes	Yes	
Dunbar	1961	Yes	Yes	
Dumbarton County	1964			
Forfar	1959	Yes	No (1967)	
Fort William	1962	Yes	Yes	
Galashiels	1960	Yes	No (1969-bus)	
Galston	1961	Yes	No (1964)	
Girvan	1959	Yes	Yes	
Grangemouth	1958	Yes	No (1968)	
Haddington	1958	No (1949)	No	
Hamilton	1958	Yes(three)	Yes(three)	
Hawick	1963	Yes	No(1969-bus)	
Invergordon	1961	Yes	Yes	
Inverkeithling	1962	Yes	Yes	
Inverness County	1963	Yes	Yes	
Irvine	1959	Yes	Yes	
Jedburgh	1962	No (1948)	No	
Johnstone	1965	Yes	Yes	
Kelso	1963	Yes	No (1964)	
Kilsyth	1967	No (1951)	No	
Kirkintilloch	1961	Yes	No	
Maybole	1967	Yes	Yes	
Midlothian	1961			
Newmilns & reenhalm	1963	Yes	No (1964)	
eebles	1961	No (1950)	No(bus)	
eebles County	1965			
enfrew County	1967			
elkirk	1962	No (1951)	No(bus)	
tevenston	1961	Yes	Yes	
tewarton	1960	Yes	Yes	
utherland County	1960			
est Lothian	1960			
hitburn (Durham)	1960	No (1953)	No	
ick	1961	Yes	Yes	

Appendix Twelve

The role of rail in a national project: the third London airport.

Rail planning played an important role in the debate around the choice of a site for London's third airport: this had begun almost as soon as the decision had been made in 1954 to locate the second airport at Gatwick, and eventually a Royal Commission was appointed in 1968 to explore four options and recommend a preferred site. It was taken for granted that rail access would be provided to the airport and table 21 shows that, although the distance from London of the options ranged from 35 to 58 miles, the difference in travelling time between the longest and shortest journeys was only 14 minutes: King's Cross was to be the London terminal in all cases. The Roskill Commission came down in favour of Cublington but Buchanan, in his Note of Dissent, favoured Foulness. This was because he could not countenance intrusive airport development in what he called, using Abercrombie's term, 'London's open background' (Roskill, 1971, 150). Although Foulness was 8 miles further away from London than Cublington, the estimated travelling time was only 5 minutes longer because it was expected that a new railway would be built to it (Roskill, 1971, fig. 10.9): this was the most expansive rail project to be countenanced since the war and was indicative of the new mood.

Table 21: Rail access to the Third London Airport

	Cublington		Foulness		Nuthampstead		Thurleigh	
	High* time value	Low time value	High time value	Low time value	High time value	Low time value	High time value	Low time value
Distance from London (miles)		48		56		35		58
Travel time form London (mins)		39		44		32		46
% surface access by rail	53	51	55	50	56	54	58	56

* Different assumptions were made as to the value of the time spent travelling by various groups of passengers

Source: Roskill, 1971, appendix 19.

SAG No.	Date Reg	Location	site area (a)	site area (ha)	current use(a)		
					transport	retail	reside
46	1974	Liverpool Road Goods Station	10.4	4.2			
48	1979	Crumpsall Sidings	5.5	2.2			
49	1978	Levenshulme South Goods depot	2.96	1.2			
164	1977	Glencastle Rd, Gorton South	2.9	1.2			
168	1977	rear 41 Grange Ave, Levenshulme	1.65	0.75			
200	1977	Tank Yard Sidings, Collyhurst	7.49	3.03			
202	1978	Fallowfield Goods Dep, Withington	4.5	1.82			
203	1978	Ceylon St, Newton Heath	3.6	1.45			
207	1977	Ancoats Goods Station	10.89	4.38			
209	1977	Chapelton St, C Centre	1.34	0.54			
210	1978	Mauldeth Rd Sidings, Burnage	4.44	1.80		4.44	
211	1977	Ardwick Goods Depot, Ashton O Rd	-12.16	-4.92			
212		Cornwall St, Gorton	1.72	0.7			
213		Gorton Lane/Preston St	12.0	4.8			
215	1977	Chorlton Goods yard	4.15	1.68			1.6
217	1980	Oldham Rd Goods Depot, Roch Rd/Old Rd.	21.72	8.78			
221	1977	Ducie St/Jutland Street, C Centre	7.10	2.87			
229	1975	Oldham Rd (Pitt Street),	4.5	1.8			
267	1976	Grimshaw Lane, Newton Heath	5.34	2.16			
314	1979	Northenden Station	1.95	0.78			
328		Slade Lane Triangle	1.7	0.6			
329		Slade Hall, Levenshulme	0.08	0.02		0.08	
330	1978	Adj. Belle Vue Station	8.0	3.22			
331		Land off Alex. Rd South, Fallowfield	4.01	1.62			
332		Cornwall St/Ogden Lane, Bradford	1.8	0.73			
333	1977	Ancoats Branch Line, off Ashton O Rd	3.2	1.3			
334		East Didsbury Goods depot	6.0	2.45			
335		off Pottery Lane, Ashton ORd, N of Ashb St	1.07	0.2			
336		Ashbury's Sidings, Bradford	17.5	7.2	8		
337	1977	Moston Exchange Sidings, off Fairway	18.0	7.3			
339	1978	Lightbowne Sidings	10.8	4.34			
340	1978	Chorlton to Didsbury Rlwy Line	22.5	9.10	22.5		
341		Queens Road Sidings	11.12	4.52	11.0		
342	1977	Longsight Coal and Mineral Yard	14.8	6.0			
343		Ardwick West Goods Depot	42	17			
344	1980	Brewery Sidings, Harpurhey	12.0	4.85			
345	1980	Phillips Park Sidings, Newton Heath	10.4	4.04			
347	1980	Collyhurst Station, Miles Platting	14.0	5.65			
352	1978	Dalton Street Sidings, Coll. Church	2.0	0.81			
354	1977	Red Bank Sidings, Coll Church	17.2	7.0			
355	1980	Victoria Station	18.31	7.41			
359		Shady lane, Baguley	0.75	0.35			
457	1977	West Didsbury Station	1.42	0.57			1.42
507	1978	Levenshulme North Goods Yard	2.55	1.03			2.55
508	1976	Broom Avenue, Levenshulme	6.9	2.8			
741	1977	Ardwick East Goods depot, Ashton Old Rd	18.5	7.48			
911	1975	Adj Gorton Station, Brightman St, Gorton	1.50	0.61			
933	1977	Tan Yard Brow, Gorton	2.33	0.94			
934	1977	Hyde Rd Goods Yard, Gorton	10.00	4.04			
992		Cheetham Hill carriage sidings	4.28	1.73	4.28		
Total			398.87	161.5	45.78	10.09	
			100%		11.50%	2.50%	1

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