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Published paper

Shires, J.D., Preston, J.M., Nash, C.A., Wardman, M. (1994) *Rail Privatisation: The Practice – An Analysis of Seven Case Studies*. Institute of Transport Studies, University of Leeds. Working Paper 420

UNIVERSITY OF LEEDS
Institute for Transport Studies

ITS Working Paper 420

ISSN 0142-8942

July 1994

**RAIL PRIVATISATION: THE PRACTICE -
AN ANALYSIS OF SEVEN CASE STUDIES**

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This paper was undertaken as part of an ESRC project on the effects of rail privatisation.

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CONTENTS	PAGE
ABSTRACT	
1. INTRODUCTION	1
2. THE PROPOSALS CONTAINED IN THE RAILWAYS ACT 1993	3
2.1 A General Overview	3
3. RAIL PRIVATISATION ELSEWHERE	5
3.1 Introduction	5
3.2 Argentina Railways	5
3.2.1 Introduction	5
3.2.2 Results	6
3.2.3 Summary	6
3.3 Germany	7
3.3.1 Introduction	7
3.3.2 The Restructuring Proposals	8
3.3.3 Main Issues of The Restructuring	8
3.3.4 Results	10
3.4 Japanese Railways	11
3.4.1 Introduction	11
3.4.2 The JNR Restructuring Act 1986	12
3.4.3 Results	18
3.4.4 Summary	19
3.5 Netherlands	19
3.5.1 Introduction	19
3.5.2 The Government's Proposals	20
3.5.3 Conclusions	22
3.6 New Zealand Railways	22
3.6.1 Introduction	22
3.6.2 New Zealand Railways Corporation	22
3.6.3 New Zealand Limited	23
3.6.4 Results	25
3.6.5 Summary	25
3.7 Swedish Railways	26
3.7.1 Introduction	26
3.7.2 The Transportation Act 1988	26
3.7.3 Financial Arrangements	27
3.7.4 Franchising	28
3.7.5 Summary	29

CONTENTS	PAGE
3.8 Amtrack	29
3.8.1 Background	29
3.8.2 Amtrack	30
3.8.3 Results	30
3.8.4 Summary	31
4. CONCLUSIONS	32
APPENDIX ONE	33
REFERENCES	34

ABSTRACT

After a brief description of the proposals for rail privatisation in Great Britain, this paper contrasts these with the proposals and experience in other countries around the world.

The proposals and experience in other countries contain some elements of the British proposals, however, the 'open access' element that features strongly in the British proposals has never been experienced on any significant scale elsewhere.

In conclusion, experience elsewhere may shed light on the likely outcome of some aspects of the British proposals, but other aspects such as 'open access' and vertical separation are still unknowns.

1. INTRODUCTION

In July 1992, the British Government published a White Paper, 'New Opportunities for the Railways'. This outlined the government's proposals for the privatisation of and introduction of competition into British Rail (BR). Over a year later and after considerable discussion the Railways Act (1993) has been enacted and took effect from the 1st April, 1994.

The Railways Act (1993) can be viewed as the culmination of government policy, which during the past 10-15 years has sought to reduce its subsidy payments to BR through improvements in productive efficiency and placing emphasis on commercialisation within the BR organisation.

This policy resulted in a total reorganisation of BR from a regional basis to a sector basis. From 1962 to 1982 BR was organised on a regional basis, with each region responsible for a variety of services. Some services that exhibited economies of scale, such as procurement and finance, were centralised. This organisational structure made allocating responsibility for revenue, subsidy and costs a very imprecise process. There was also a separation of the commercial and the operating roles of management, right up to the Chief Executive level.

In an aim to improve the accountability of services, and managers, BR was reorganised into five sectors, Intercity, Regional Railways, Network Southeast, Freight and Parcels (see Castles, 1993). Staff and assets were made sector specific, although operations were still carried out by the operating department. The two main advantages of this organisation (see Nash & Preston, 1993) were (i) it made possible the definition of much clearer lines of managerial control and (ii) every manager had much tighter control over assets and so increased accountability for both his own and his sector's performance.

This policy, coupled with government cuts in subsidy throughout the eighties, has resulted in an impressive improvement in both BR's productive and commercial performance, as illustrated by Table 1.1.

Table 1.1: BR Performance 1979-1991/92 (1991/92 prices)

	1979	1983	1989/90	1991/92
Total Grant (£m)	1,237	1,430	705	1,035
Pass. Route Miles	8,955	8,932	8,897	8,880
Pass. Miles (millions)	19,000	18,350	20,908	19,920
Fare per passenger mile	9.14	9.69	10.81	10.51
Passenger Stations	2,365	2,363	2,483	2,473
Passenger Train Miles (millions)	196	203	225	231.3
Train Miles per Member of Staff	1,521	1,686	2,043	1,996

Source: British Railways Board, Annual Reports and Accounts

Without wishing to dwell on Table 1.1, it can be seen that BR has succeeded in significantly reducing its total grant/subsidy throughout the eighties with only a slight reduction in the passenger network. The main reason for BR's improvement in performance is rooted in staff productivity, which grew by 34% between 1979 and 1989/90. The start of the recession in 1990/1 and the increased concern over safety reduced the gains achieved, but the overall performance was still impressive. Proponents of privatisation felt such an improvement gave an indication of potentially larger productivity gains from the full scale privatisation of BR.

This opinion was reflected by the government, who felt that BR could improve both productivity and financial performance. It ultimately envisaged BR, or a large part of BR, surviving on no subsidy and making a commercial rate of return on its assets, see Foster (1994). This, together with the European Commission directive 91/440 and Council Regulation No 1893/91,

- (1) Member states must establish separate accounts for infrastructure and for train operations.
- (2) Operating companies providing international rail passenger transport are to have transit rights over Member States railway networks by the 1st January, 1993.

has been the stimulus for the Railways Act 1993.

2. THE PROPOSALS CONTAINED IN THE RAILWAYS ACT 1993

This section presents a general overview of the proposals, for a comprehensive account of the proposals see Shires et al (1994).

2.1 A GENERAL OVERVIEW

Rather than privatise BR as a vertically integrated company, the government has split BR into two parts, infrastructure and operations. The provision and operation of rail infrastructure (track, signalling etc...) becoming the responsibility of Railtrack. Initially, Railtrack will remain in the public sector, but is still expected to act as a commercial organisation, recovering its full costs and earning a rate of return (5.6% initially, but eventually 8%) from charges it levies on operators. It is envisaged that Railtrack will eventually be privatised. Railtrack's other responsibilities include arranging the maintenance of the infrastructure, monitoring of on-track safety and the timetabling of all services across the network.

By creating Railtrack the government has retained the infrastructure as a natural monopoly and eradicated the 'sunk cost' element it would otherwise represent for new entrants into the rail market. The government sees this reduction in an entrant's 'sunk costs' as a vital ingredient for allowing competition on the railways. Entrants' 'sunk costs' will be reduced even further with the creation of Rolling Stock companies (ROSCOs), that will offer a range of rolling stock for operators to lease.

On the operating side, both the Freight and Parcels divisions will be sold outright. Trainload Freight and Railfreight Distribution's Contract Services division will be formed into three new competing companies organised along geographical lines based around a North East, South East and West/Scotland division. Each division will have access to its own maintenance depots and rolling stock, and will not be local monopolies. The divisions will have to negotiate with Railtrack for 'paths' and will immediately face 'open access' from other freight hauliers.

Railfreight Distribution's European business will be managed through the start-up phase by BR and privatised as soon as possible, once the key Channel Tunnel freight services are established. The government is also inviting proposals from the private sector to participate in the Freightliner network (existing losses prohibit outright privatisation). The Parcels sector will be privatised as two separate parts, Red Star and Rail Express Systems (an attempt to sell Red Star has already failed).

Looking at the passenger side 25 Train Operating Companies (TOCs) have been created, reflecting the number of profit centres that existed under BR (see appendix one for a list of TOCs and their main characteristics). These TOCs will eventually be franchised out to private companies. At the moment the TOCs are trading, within the remnants of BR, as Train Operating Units (TOUs), therefore, to simplify matters I will only use the term TOCs throughout the rest of this working paper. The Office of Passenger Rail Franchising (OPRAF) will set minimum standards in terms of frequency, reliability and overcrowding and stipulate maximum fares. It will also want to be satisfied that potential franchisees meet all the safety criteria that presently exist. For some Intercity routes, franchisees will be expected to pay for

their franchises, whilst on loss-making routes the 'lowest subsidy offered' will be the criterion. However, the latest set of infrastructure charges published by Railtrack make all routes loss-making (with the possible exception of Gatwick). Any franchise not let will continue to be operated by the British Railways Board (BRB).

OPRAF will then have to negotiate a contract with Railtrack, for paths and the appropriate charges for the new franchisees. From April (1994) the TOCs have operated as independent subsidiaries of BR. By the end of 1995 the first franchises will come into existence. Rather than franchise the whole network together, the government has earmarked six 'shadow franchises' to form the first wave of franchises. These comprise: 'Gatwick Express', 'London, Tilbury and Southend', 'South Western', 'Scotrail', 'East Coast Mainline' and the 'Great Western'. The new railway system will also incorporate an 'open access' policy. This will allow other operators (possibly other franchisees) to operate services on any section of the network, providing they satisfy all the regulations set down by the Regulator (including safety) and have negotiated 'access contracts' with Railtrack. However, it is envisaged that 'open access' will be delayed for two years to allow rail franchisees to overcome initial stumbling blocks, a so-called 'honeymoon period'.

The final player in the government's Railways Act 1993 is the Regulator, whose general duties are outlined in section four of the Railways Act 1993. These duties include:

- (1) **Competition and Access** - The Regulator must ensure that Railtrack does not abuse its monopoly position and does not discriminate between different train operators. As such all access agreements will be subject to his approval and constant monitoring.
- (2) **Licensing and Closure** - All operating licenses are issued by the Regulator who will have to be satisfied that the operators are 'safety validated' and properly insured. The Regulator will also have responsibility for the closure of lines, attaching conditions to closures in certain circumstances.
- (3) **User Interests and General Duties** - The Railways Act 1993 states that part of the Regulator's duties is "to protect the interests of users of railway services". The main voice for users in the new rail set up are the Rail Users Consultative Committees (RUCC), who succeed the Transport Users Consultative Committees. It is hoped that both the Regulator and the RUCC's will act together to protect rail user interests. The Railways Act 1993 also places great emphasis on the Regulator promoting 'efficiency and economy on the part of persons providing railway services', on developing the 'rail network to the greatest extent that he considers economically practicable' and 'to enable persons providing railway services to plan the future of their businesses with a reasonable degree of assurance'.

3. RAIL PRIVATISATION ELSEWHERE

3.1 INTRODUCTION

This section examines rail privatisation elsewhere in the world and tries to draw some parallels with the proposed rail privatisation in the UK. In all, six privatisations and proposed privatisations are examined, namely Argentina, Germany, Japan, the Netherlands, New Zealand and Sweden. In addition, the experience of AMTRACK in the US, as a publicly owned passenger operator using private infrastructure, is noted. The examples cover a wide range of railway types, so in many cases we are not comparing like with like. However, a number of lessons can be drawn from these examples which can be applied to rail privatisation in the UK.

3.2 ARGENTINA RAILWAYS

3.2.1 Introduction

Until 1989, railways in Argentina operated as a nationalised industry (Ferrocarriles Argentinos, FA) organised into six main divisions. This organisation was the result of a variety of government and business constructed railways, that in 1946/47 were nationalised by the Argentine government.

Despite large reductions in route-kms and staff, from 45,000 km to 29,000 km and 210,000 staff to 85,000 staff, by 1989 the railways were reaching a crisis. Market share was around 8% of the freight and inter-city passenger market and government subsidy was £212 million (revenue contributions) and £150 million (capital expenditure). Over half the locomotive fleet was unserviceable, with 50% of the routes subject to speed and axle restrictions.

To arrest the decline in performance the government of President Carlos Menem, at the instigation of the World Bank, decided in 1989, to offer franchises for the operation of freight services over large areas of the rail network. The infrastructure and rolling stock were to remain in the ownership of the government, whilst a government regulatory authority and an independent safety authority were to be set up. The elements of the franchising are,

- (a) The franchisee rents both the infrastructure and rolling stock from the government during the franchise period, at the end of which the government retains possession. The franchises are for 30 years with 10 year renewal options.
- (b) The only operating obligation on the franchisee is one of maximum charge level (still a high level). Also included in the bid is a proposal for investment over the franchise period and an obligation to maintain infrastructure in operating condition.
- (c) The franchisee will have to implement an investment plan negotiated during the bidding process, subject to negotiation after five years.

- (d) If the franchisee rescinds on his contract he will lose a guaranteed amount, but will recover the current value of investment, minus a share of 40% to 50%, as unique indemnification.
- (e) The franchisee must allow 'open access', for which they will receive a payment.

The franchise is awarded using a points system, which awards points after considering the previous experience of the franchisee, the proposed investment, the number of railwaymen to be absorbed and the amount bid for the franchise.

There are no explicit subsidies being offered but low charges for both infrastructure and leasing mean an implicit subsidy is on offer, which according to Muller (1992) is,

"..equivalent to more than 40% of annual revenue."

The overall franchise strategy was reached after consultation with the World Bank, who besides advice also gave US \$300 million in loans towards restructuring the rail system. Apart from the franchising of freight services the other planks of the policy were,

- (a) Separation of passenger services into commercial and socially necessary services.
- (b) Creation of a Buenos Aires Metropolitan Transport Authority to coordinate commuter services to the region.
- (c) Reducing staff levels and reforming working practices.
- (d) The setting up of a property unit for the sale of excess assets.

3.2.2 Results

Of the six franchises on offer only one, the Belgrano line, has received no bids. The other five have either been franchised out or are having bids assessed. The majority of the franchisees/bidders are consortia with only limited experience of large-scale rail operations. The exception to this rule being Canadian National and Conrail who form part of the consortium running the Roca system and the Urquiza line respectively.

As regards passenger services, only the Buenos Aires - Mar del Plata route is considered profitable, with four bids being considered. Routes outside of metropolitan areas will be offered to provincial government to run. If the provincial government declines the service will be closed. The suburban services serving Buenos Aires will be franchised, with the key measure being the 'lowest subsidy' bid.

3.2.3 Summary

As yet it is impossible to evaluate the structural changes that have taken place within Argentina's railways. There is no doubt that Argentina has embarked upon the largest rail privatisation scheme in the world. However, the likelihood of success

must be questioned given the implementation time period of three years and the limited experience of the franchisees.

Both Muller (1992), and Ridley and Terry (1992) predict operational cost reductions because of a change in ownership. They also forecast a shift towards an American-style trunk-haul operation and the resultant closure of unprofitable routes and reduction in staff.

The crucial element will be the level of investment by both the government and the franchisees. No doubt investment to maintain present operations and standards will take place, but whether the investment necessary to promote strong traffic increases will take place is a different matter. Given the state of the present track and the cost of upgrading it, a scenario of private railways continuing until great investment is unavoidable after which franchises are returned to the government, is not unforeseeable.

3.3 GERMANY

3.3.1 Introduction

Before January 1 1994, German railways came under two national organisations, Deutsche Bundesbahn (DB-former West German railway) and Deutsche Reichsbahn (DR-former East German railway), both operating in their former territories. They now operate under the same banner, Deutsche Bahn AG (German Rail plc), and have been split into an entrepreneurial area (responsible for train operations) and a public sector area (responsible for non train tasks), destined to be privatised.

This reform process is rooted in the final report of the governmental railway commission presented in December 1991. The commission, set up in July 1989, was initially intended to examine the future of DB, but was extended to include DR with the fall of the Berlin wall later that year. The commission noted two main points,

- (1) DB's market share was 6% of the passenger market and 23% for the freight market. DR's market share was greater, but due to increased availability of lorry and car, was declining fast.
- (2) Low investment in DR, the result of a weak economy, means that DM100 bn may have to be spent to restore the DR network to reasonable condition.

It concluded that if change were not implemented then government subsidy would reach unbearable levels within 10 years.

On July 15, 1992, the government initiated a strategy that would eventually result in three commercial businesses, passenger, freight and infrastructure, all of which would be earmarked for privatisation. The restructuring process can be seen diagrammatically in the Railway Gazette International (July, 1993), and is described fully in the next section.

3.3.2 The Restructuring Proposals:

By January 1, 1994, the two railways had merged into one Federal Railway Property, which itself was divided into two separate areas with responsibility for their own budgetary and accounts;

- (1) An Entrepreneurial Area - consisting of all transport and related business activities, and infrastructure management, construction, operation and maintenance.
- (2) A Public Area - consisting of all the state tasks formerly handled by DB and DR, the administration of the debts of the single Federal Railway Property, the administration of land holdings not required for rail operations and the administration of DB staff who remain civil servants.

After January 1, 1994, the entrepreneurial area became DBAG, a public limited company with share capital, owned wholly by the Federal Government and divided up into three business sectors; passenger; business; infrastructure, at regional level. That is to say that the 15 regional headquarters of DBAG will be organised on a sector basis.

Another organisation will be created, a Federal Railway Office, to handle state tasks such as approving construction plans for a new railway line. The rest of the public area will remain in the Federal Railway Property.

By 1997, the government envisages the three business sectors of DBAG being transformed into public limited companies, allowing the participation of third parties. DBAG would therefore act as a holding company until 2002 when it is envisaged that the three sectors would become fully independent, with their shares offered for sale to the public.

3.3.3 Main Issues Of The Restructuring:

(i) Article 87

This article of the basic law required railways to be part of the federal administration, so preventing even a formal privatisation. This has since been modified to enable restructuring to commence.

(ii) Civil Servants

DB's initial establishment as a state enterprise subjected it to public service regulations and budget laws. The result was that 130,000 DB personnel were classed as civil servants, with employment guaranteed for their working lives and generous pensions. It was also felt that the 270,000 other employees of DB and DR were entitled to job preservation, as a consequence no jobs will be lost from the creation of DBAG.

The result has been DBAG taking over only those employees necessary for its operations, with the remaining civil servants remaining with the Federal Railway Office and Property. Three remaining mechanisms will be used to adapt the civil servants terms and conditions, see Railway Gazette International (July 1993). These are:

- (a) Voluntary surrender of civil service status at their request.
- (b) Suspension of civil service status for a given time, in which there will be a normal employee relationship with DBAG.
- (c) Secondment of the civil servant to DBAG, which would pay the Federal Railway Property only the salary of a normal employee under market conditions.

(iii) Debt Burden And Investment

The historic debt of both DB and DR was forecast to reach DM70bn by the end of 1993. The Federal government recognised that DBAG could not sustain this level of debt for long and released both DB and DR not only from their historical debt, but from liabilities attributable to excessive staff, and from obligations arising from environmental responsibilities. In addition the government has also accepted responsibility for the DM100bn worth of investment necessary to reconstruct DR.

DBAG has been released from the restrictions imposed by public service and budget laws. The company's assets have been revalued at around 22% of their present DB/DR level, and DBAG was launched with no capital debts.

(iv) Regionalisation

This process removes the power to determine local rail services and the responsibility to finance them from a national to a regional level (to state governments known as Lander). This is a key feature of the restructuring process, see Ridley and Terry (1992). Previously, the Lander were a powerful lobby for the retention and improvement of rail services, payment for which came from Federal funds. Now the Lander have to set a service level and enter into a contract with a railway operator. Three scenarios have been discussed:

- (a) The Lander arrange for DBAG to run local or regional train services, specified on a contract basis.
- (b) The Lander establish their own rail operating subsidiary to operate on DBAG's lines.
- (c) The Lander purchases lines from DBAG, and then lease them to third parties via municipal corporations.

Previously, DB and DR provided such services in return for a PSO grant from the Federal government of around DM6bn (1993). The Lander have asked for DM14bn,

plus the continuation of the Gemeindeverkehrsfinanzierungsgesetz (GVFG), around DM6bn a year, for joint Federal/Lander investment in local and regional transport projects. This amount is seen as unacceptable, especially given Heinz Durr's (Chairman of DBAG) statement that the DM6bn paid to DB and DR in 1993 would be sufficient for DBAG to maintain regional services, given the expected cost reductions in DBAG's operations.

To placate the situation, the Federal government is to continue funding DBAG directly for regional rail services till at least 1995, when regionalisation will be examined again.

(v) Open Access

In principle, any domestic rail operator or foreign operator (providing open access is reciprocated in their country of origin) can run trains over the German rail network. Access price charging is envisaged as adopting a market approach, with charges set according to 'revenue potential' on the line; the quality of service demanded; wear and tear inflicted upon the track; the relevant competitive position and the amount of excess capacity on the network.

The Lander have expressed their wish to see fixed infrastructure user charges. However, DBAG see this lack of charge flexibility as reducing the scope for efficient, market led infrastructure management.

(vi) Paying for the Infrastructure

A decision made by the Federal Government on February 17 1993, established an obligation for the Federal Republic to contribute financially to investment in infrastructure. DBAG will pay back investments financed by the Federal government up to the amount of depreciation that both parties consider to be necessary, (Railway Gazette International July, 1993). For lines considered indispensable, DBAG will borrow in the capital markets.

The Lander feel that, over all responsibility for infrastructure investment should rest with the Federal government, preferring the government rather than DBAG to retain ownership of the infrastructure.

3.3.4 Results

It is too early to comment on the effect restructuring has had, however DBAG has produced some forecasts for costs and revenues over the next 10 years. It predicts that Federal subsidies will be around DM428bn compared to DM569bn without the reforms, saving around DM100bn. The savings will be achieved through greater efficiency and increased traffic. For example, DBAG's business plan projects savings of DM36bn from rationalising train crews and DM7bn through competitive purchasing and rationalisation of maintenance.

3.4 JAPANESE RAILWAYS

3.4.1 Introduction:

Japanese railways were reorganised in 1949 with the creation of the state-owned corporation, Japanese National Railways (JNR) operating a nationwide network of about 21,000 km. In addition to JNR there are 15 major private railways and 161 smaller railway operators in Japan. The private railways are to be found in the metropolitan areas where high densities of commuter traffic make them quite profitable and non-rail opportunities such as property development exist.

Railways have always played an important role in Japan, more so than in other first world countries, see Table 3.1,

Table 3.1: International Comparison of Rail's Share of Passenger Market

	1965	1970	1975	1980	1985	% Change
Japan (JNR)	45	32	33	25	23	-49
(Private)	21	17	15	15	15	-29
U.K.	10	9	9	7	7	-30
West	11	8	7	7	8	-27
Germany	21	12	12	11	10	-52
France						
USA	2	1	1	1	1	-50

Source: Quoted by Maeda, 1993.

Despite suffering from a 42% fall in ridership, in absolute terms railways in Japan are still extremely important. The main reasons for such a strong use of railways by passengers have been identified as high population densities, the issuing of 'commuting passes' by Japanese firms, until recently a poor road network (due to the mountainous terrain) and low levels of car ownership. The development of the high speed Shinkansen network in the 1960's has also contributed to JNR maintaining relatively high passenger market shares e.g. the Shinkansen carries over 90% of passenger demand in the inter city urban market between Tokyo and Osaka (560 km).

In contrast JNR's share of the freight market fell considerably from the 1960's onwards, see Table 3.2.

Table 3.2: International Comparison of Rail's Share of Freight Transport Market
% in Tonne KM

	1965	1970	1975	1980	1985	% Change
Japan (JNR)	30	18	13	8	5	-83
(Private)	1	-	-	-	-	-
U.K.	21	19	15	12	12	-62
West	34	33	26	25	25	-26
Germany	44	37	35	32	31	-30
France	43	40	39	38	37	-14
USA						

Source: Quoted by Maeda, 1993.

The main factor operating against rail in the freight market is the fact that being an island country, most raw materials are imported. The most efficient mode is therefore ship and as a result the majority of heavy industries are located on or near the coast.

Despite the favourable conditions for passenger traffic, by the 1980's JNR was reaching a financial crisis point. The result of which was to be the complete restructuring of JNR in 1986.

3.4.2 The JNR Restructuring Act 1986:

Background:

Table 3.3 sets out the financial performance of JNR from the 1960's (all figures in Billion of yen). From 1964, when JNR recorded its first deficit, JNR's financial position grew steadily worse. The annual deficit was 123 billion Yen in 1965 and by 1985 was some 2,100 billion Yen (excluding subsidy), whilst the long term debt had grown from 1,110 billion Yen to 23,561 billion Yen. The major cause of this huge long term debt was continued construction of new lines throughout the period being examined. Pressure for the constructions came mainly from Japanese politicians, who regarded railway's main role as one of socio-economic development. Since JNR, in principle, was fiscally independent as a public corporation, JNR had to borrow to cover the operating deficit and the construction of new lines. The consequential repayments and interest charges put a crippling strain upon JNR e.g. 1,220 billion Yen paid in interest in 1985 (35% of operating revenue).

Table 3.3: Financial Performance of JNR

Year	1965	1970	1975	1980	1985	1986
Total Revenue	634	1,146	1,821	2,964	3,553	3,605
Passenger	412	846	1,315	2,242	2,942	3,027
Freight	198	254	242	330	186	167
Miscellaneous	238	33	67	102	183	222
Subsidy	-	12	198	289	242	188
Total Cost	757	1,297	2,736	3,972	5,401	4,966
Staff	310	573	1,266	1,859	2,302	2,115
Material	231	374	793	1,231	1,461	1,197
Interest	65	152	406	477	1,220	1,325
Depreciation	153	202	280	398	589	668
Other	0	(3)	(9)	(8)	(172)	(339)
Net Profit	(123)	(152)	(915)	(1,008)	(1,848)	(1,361)
Long Term Debt	1,110	2,604	6,779	14,399	23,561	25,065
Total Subsidies	14 ₁	12	268	677	600	378
No. of Staff (000's)	462	460	430	414	277	224

Note : ₁ Total of subsidy between 1949-67
: Numbers in () represent minus
: All figures are expressed in money term of each year (in billions of Yen)

Source: Quoted in Maeda, 1993

Further financial pressure resulted from overstaffing, with staff levels of 469,693 in 1966 and 276,774 in 1985. This resulted in staff costs of some 2,300 billion Yen in 1985, or some 70 % of operating revenue. Together with a 'gold plated' pension scheme, labour costs were pushing JNR further and further into financial crisis.

Another factor increasingly blamed for the financial crisis was that of 'weak management'. After the first recorded deficit in 1964, JNR's management team tried to improve and recover its financial performance through a series of reconstruction plans. In total five reconstruction plans were followed, all of which were unsuccessful and abandoned on the way. The continuing theme of these plans was to aim for a balanced budget through a combination of increased fares and increased traffic, with an element of government debt support in some of the plans. However a combination of adverse public opinion, weak government support and strong unions (failure of Productivity Improvement), ensured that these plans were never successful.

The final factor that led to the reorganisation of JNR was the financial performance of the private railways, see Table 3.4.

Table 3.4: Financial and Operational Performance of JNR and Private Rail Operators

	JNR 1985	15 RAIL 1990	SUBWAY 1990	OTHERS 1990
No. of operators	1	15	13	100
Route km	20,479	2,864	515	3,464
No. of staff (000's)	277	56	31	20
Vehicle km (Mil.)	3,949	1,737	515	273
No. of passengers (Mil.)	6,941	7,835	4,783	1,055
Passenger km (Mil.)	197,463	112,745	N/A	N/A
Total Revenue	3,605	2,284	N/A	N/A
Railway's Revenue	3,311	1,114	610	161
Railway's Costs	5,401	963	558	157
Railway's Profit	(2,090)	152	53	4
Rail's costs/ Rail's revenue	74%	42%	47%	62%
Vehicle km/Staff	14.3	31.0	17.2	16.1

Note: 15 Rail represents the 15 biggest private railways.

Revenue and costs are actual results.

Only JNR's results are for rail operations only, the others include non rail contributions.

Source: Quoted by Maeda, 1993.

The apparent financial viability of the private railways and higher labour productivity led for calls from the government and the public for increased productivity from JNR and financial viability via reorganisation of JNR. This opinion was slightly biased given that private railways gained over half of their profits from the hotels, department stores and real estates that they have developed around their railways (see Table 3.5). JNR was prohibited from these activities by law.

Table 3.5: Private Railways Revenue Breakdown

Business sector (revenue break-down, %)	Seibu	Sagami	Toyko	Keihin	Odakytu	Nippon Express
Railways	36	20	33	41	62	9
Real estate	20	49	19	23	23	-
Tourism	44	-	-	-	-	-
Bus lines	-	7	10	-	18	-
Mineral extr.	-	24	-	-	-	-
Hotels	-	-	18	13	-	-
Entertainment	-	-	-	-	13	-
Trucking	-	-	-	-	-	49
Shipping	-	-	-	-	-	9
Warehousing	-	-	-	-	-	5
Air freight	-	-	-	-	-	15
Others	-	-	12	5	2	19

Source: Ridley and Terry, 1992

For a very detailed look at the implications of the act and the reasons for the proposals contained in it see Maeda (1993). In this section I will present a more summarised version. The overall purpose of the act was to remove the special position of Japanese railways in law and government. Instead of having an object to, 'improve the welfare of the general public' its new mission was to, 'respond to market needs and establish effective management'. As a direct result of this the JNR was separated from the civil service; government responsibility for the construction of new railways was taken away; no specific legislative approval was required for fare rises. JNR was fully capitalised by the government who will eventually list the stocks on the Tokyo Stock market. However, up to press only JR East has been sold, but for all practical purposes JNR has been privatised.

The blue paper 'JNR Reformation' had set the format for the JNR Restructuring Act. Despite forecasting a reduction in rail's share of the passenger market (see Table 3.6), the blue paper still sees rail's role as one of dominance in the inter city market (300-700 km) and commuter market. It concentrated on two major reforms (1) the

establishment of a truly free/independent management (2) restructuring the railways into regions as opposed to the national organisation that existed at that time.

Table 3.6: Traffic Forecasts

a) Forecast	1) 1990			2) 2000		
	Demand	Share %	% change 1990/1983	Demand	Share %	% change 2000/1983
Total	921430		112	977688		119
all railway	317833	34	99	308854	32	96
JNR	185114	20	96	180289	18	93
Commuter	79879	9	102	75071	8	95
Non Commuter	55564	6	87	50198	5	79
including						
Shinkansen	49671	5	98	55020	6	109
Private railways	132719	14	103	128565	13	100
Cars	554737	60	120	609800	62	131
Airs	43557	5	142	54307	6	177
Ship	5303	1	93	4727	0	83
b) Results	1) 1975			2) 1983		
	Demand	Share %		Demand	Share %	
Total	710711			821963		
all railway	323800	46		321452	39%	
JNR	215289	30		192906	23%	
Commuter	75985	11		78667	10%	
Non commuter	85986	12		63799	8%	
including						
Shinkansen	53318	8		50440	6%	
Private railways	108511	15		128546	16%	
Car	360868	51		464162	56%	
Air	19148	3		30627	4%	
Ship	6895	1		5722	1%	

Source: Quoted by Maeda, 1993

The blue paper identified several reasons for managerial underperformance within JNR. Firstly the strict regulation of JNR and its image as a 'public good' resulted in delayed fare changes and the construction of unprofitable lines, which went against management judgement. Secondly, lack of managerial independence in all aspects of operations including wage negotiations led to ambiguous management and low morale. Thirdly, the restriction placed on JNR as regards development of retail business and real estates severely restricted the opportunities open to JNR.

The nationwide organisation also received wide criticism in the blue paper. Problems it identified included diseconomies of management, excessive cross subsidy that distorted information on costs and revenues, a lack of incentive to compete with other transport modes and a lack of competition between JNR managers themselves. The blue paper suggested that a structure of regional privatisation would create more responsive operations.

The implementation of the JNR Restructuring act has followed the blue paper proposals very closely. JNR has been split up into six geographical operating passenger companies (Hokkaido, Shikoku, Kyusyu, East Japan, Central Japan and West Japan). These are vertically integrated companies and are known as JR's. Each area has been designed so that between 95-98% of traffic completes its journey within each area. A nationwide freight company has been set up, the Japan Freight Railway Company. This only owns 80 km of track and rents access space from passenger companies, the rental fee being calculated on the basis of avoidable costs. The freight structure is national rather than regional because the government felt greater co-ordination was required with other modes at both ends of the feeders and because some 60% of all freight traffic crosses the border of passenger companies.

Also hived off into separate companies have been research and development (RTRIF), Railway Telecommunications (RT) and Railway Information System (RIS).

A JNR Settlement Corporation (JNRSC) has been set up and is legally responsible for the repayment of most of JNR's long term debt and the relocation of redundant staff. Out of the 25.6 trillion Yen of long term debt attributed to JNRSC, 2.9 trillion yen are assumed to be reimbursed from the Shinkansen Holding Corporation (SHC), 7.7 trillion from the sales of JNR owned non railway real estates and the 1.2 trillion Yen from the sale of JNR stocks. The remaining 13.8 trillion yen will be borne by the government.

The SHC, referred to above is a government agency which owns the infrastructure of the Shinkansen and leases out these lines to the three operating companies through which they run, for 5.7 trillion yen. It also is responsible for the JNRSC 2.9 trillion Yen of long term debt.

Only three of the JR's are profitable, namely JR-East, JR-Central and JR-West. This is mainly due to their running through the most densely populated areas and feeling the benefit of staff reductions and improved management. This improvement in profitability prompted the three companies to buy their sections of shinkansen, though at a price that represents their commercial worth not their book values.

The other three JR's receive financial help from two sources, the 'Three Islands Companies Fund' and the Management Stabilising Funds (MSF). The former is specifically to help with investment and was set up by the government in a political deal termed 'consolation money'. The MSF is a direct subsidy to supplement the revenues of the three Islands. The fund is in the form of the debt of JNRSC to the three island companies, totalling some 1.3 trillion Yen: 682.8 billion Yen to JR Hokkaido, 208.2 billion Yen to JR Shikoku and 387.7 billion Yen to JR Kyusyu. The debt will be repaid to each company in 10 years at an annual interest rate of 7.3%. Only the interest accruing from the fund will be used to supplement the revenue.

Other financial help for all the JR's comes in the form of central and local government grants towards new high-speed projects. The Ministry of Transport (MOT) has established a subsidy rule through which the construction costs of new lines are shared between JRs (50%), central government (40%) and local government (10%).

For new stations the share is 50%, 25% and 25%. Subsidy for other Inter city projects has to be negotiated on a case by case basis.

3.4.3 Results

A thorough breakdown of the results are presented in chapter four of Maeda, but a summary of the main results can be found in Table 3.7.

Table 3.7: Key Financial and Operational Indices of JNR

	Passenger		% change	Freight		% change
	1984	1991		1984	1991	
Revenue	2691	3946	46.6	202	195	-3.9
Costs	2988	2257	-24.4	386	191	-50.4
Traffic units	194180	247031	27.2	22485	26791	19.2
Train km	515522	684368	32.8	1017800	91329	-10.3
No. of staff	253684	138901	-45.2	46600	10489	-77.5
Staff costs	1799	1206	-33.0	240	89	-63.0
Units: Revenue, costs -- billion yen						
Traffic units -- passenger km and tonne km in millions						
Train kms -- in thousands						
Revenue/ Cost	0.90	1.75	94.1%	0.52	1.02	93.7%
Revenue/ Traffic Units	13.86	15.97	15.3%	9.00	7.26	-19.3%
Traffic Units/ Train km	377	361	-4.2%	221	293	32.8%
Train km/ No. of staff	2032	4927	142.5%	2184	8707	298.7%
Staff costs/ No. of staff	7.09	8.68	22.4%	5.15	8.47	64.4%
Staff costs/ Total costs	0.60	0.53	-11.3%	0.62	0.46	-25.5%

Source: Quoted in Maeda, 1993

The results are impressive for both freight and passenger traffic but especially for passenger. Revenues for passenger traffic have risen 46.6% from 1984 to 1991, whilst costs have fallen by 24.4% during the same period. Another significant figure is the number of staff, falling by 45.2% to 138,901. However, it is important to point out that strictly speaking we are not comparing like with like here. A change in the product mix and concentration on key corridors has resulted in some low profit lines being withdrawn and others opened up. When looking at the number of staff, it should be borne in mind that these reductions in staff numbers have been brought about partly by sending staff to subsidiaries and affiliated companies. This 'making best use of redundancies' is common practice in Japan, and by no means is confined to the railway industry only.

3.4.4 Summary

The turn around in the performance of JNR is impressive, although it is tempered somewhat if one considers the size and availability of subsidy that still exists. This is a reflection of the political importance that railways still have and their importance in the nation's economic planning. The effect of physical factors in JNR's new found profitability should not be underestimated. As Ridley and Terry (1992) point out,

"In many areas there is extreme pressure on land, which makes new surface transport infrastructure expensive, slow and difficult to achieve...By the same token, the high value of land opens up the possibilities for deals with developers, farmers, and existing owners who might benefit from the new rail construction taking place."

The main elements in the turn around of JNR can be summarised into several points.

- (1) **Separation of long term problems**
The repayment of long term debt and the redeployment of redundant labour was made the responsibility of JNRSC, whilst the shinkansen infrastructure was handed over to SHC. This ensured a smooth transfer and established a sound basis of operation even during the reconstruction of JNR.
- (2) **Corporatisation and Privatisation**
This brought a commercial attitude to both managers and staff.
- (3) **Deregulation**
The separation from government control brought new freedom to managers and increased their accountability and freedom to develop other businesses, such as retail and property.
- (4) **Withdrawal of special local lines**
A total of 3,160 kilometres of extremely unprofitable lines were withdrawn.

3.5 NETHERLANDS

3.5.1 Introduction

At the moment railways in the Netherlands are subject to a high degree of government intervention at every level. Netherlands Railways (NS) does not have the freedom to decide its own fares, levels of service or investment plans. Government influence does not end there, but extends to the operational aspects of NS too. As Huisman (1993) acknowledges,

"The present arrangements between the government and Netherlands Railways include a mixture of responsibilities without, however, offering Netherlands Railways adequate incentives to serve its market in the best way."

This type of arrangement is a result of the Dutch government's concern for a national strategic transport plan. However, several recent events have initiated reform in public transport administration, resulting in a more market oriented, independent NS. These events include (1) the Wijffels Committee report (1992), that urged the government to afford NS the scope to function as an independent business and to create distinct organisational divisions within NS, (2) EC Directive No 91/440 and Council Regulation No 1893/91, whose main provisions are for the separation of rail operations and infrastructure, and 'open access' on rail networks, (3) the governments belief that the transport system underpins sustainable economic growth. This last point was recognised by the government and NS as early as 1988. NS put forward the RAIL 21 plan which aimed to double passenger traffic by the year 2005 with no increase in subsidy (see appendix three of Preston et al, 1994). The government in turn promised to introduce a number of measures to restrain car growth i.e. inter-urban road pricing. However, despite NS increasing passenger kilometres by 40% since then, the government has still to deliver its promises on car restraint.

3.5.2 The Government's Proposals

The gist of the government's proposals is that NS will retain full responsibility for the operation of rail services, with the freedom to set levels of service, fares and investment necessary for operations. All other aspects of rail provision such as infrastructure management will be managed by the government or the government via a third party. Some of the main elements of the proposals are set out below.

(1) Infrastructure

The Dutch government will have responsibility for the development, management and financing of the railway infrastructure. However, it will assign the management of the infrastructure in the short and medium term to an administrative unit of NS, known as NS Infrastructure (NSI). The terms and conditions will be laid down in contracts between the government and NSI, and will contain incentives to encourage efficient performance by NSI. NSI will also have to tender work out.

The Dutch government will retain a long-term role in infrastructure planning, to complement its integrated planning policy. That is to say rail infrastructure planning will be related to the planning of other transport modes, the environment and of land-use.

(2) Capacity Management

The government recognises that capacity management is an integral part of NS's operations. As such it will leave it with NS but to ensure impartiality (to allow open access) will create a distinct organisation within NS to manage capacity; will set out allocation rules; create a regulatory body to ensure impartiality; and operate an appeals mechanism.

(3) Freight Services

At present NS Freight has complete commercial freedom, and is able to set freight rates as it chooses. The Dutch government eventually wants NS Freight to operate as an independent business unit on the open market, with its own legal status. One of the essential elements in freight's future is the ability to attract and handle new traffic. The RAIL 21 CARGO plan was submitted in 1990 for just this purpose. This plan included a new freight route between Rotterdam and Germany (since approved) and the development of international inter-modal services.

(4) Passenger Services

The Dutch government envisages a profitable and market oriented NS passenger division, responsible for its own fares, levels of service and investment plans. At the moment the government has a contract with NS, under which NS is promised a real level of support in return for a minimum level of service (maximum fares are also stipulated).

In future the government hopes to separate the commercial and the social aspect of NS rail operations through the contracting out of transport services which are not commercially viable for NS, but which nevertheless are socially desirable. This would then allow NS to concentrate on its commercial operations, aided and abetted by the government's Second Transport Structure Plan. The aim of this plan is to create favourable conditions for public passenger transport through urban planning, car-parking policy and pricing differentials between car and public transport.

To obtain a situation where government finances are only required for infrastructure investment and the contract sector, with passenger services being profitable, the government has identified a six year program from 1994-2000. The program has three main components, (1) An improvement in NS's efficiency, (2) NS will have to increase fares in real terms, (3) NS will have to consider cutting unprofitable services.

(5) Finance and Investment

At present the government subsidy to NS is equal to NLG 1,600m per year, consisting of over NLG 1,000 m for infrastructure maintenance, some NLG 450m for operations and another NLG 150m for infrastructure and capacity management etc.... The portion of this subsidy that the government wishes to eradicate is the NLG 450m operating subsidy. The government feels that this could be achieved by its six year program e.g.

(1) efficiency improvements of 2% per year would save NLG 40m per year, (2) a fare increase of 1% would improve NS results by NLG 15m, (3) network rationalisation of non-profitable services would save NLG 5m, resulting in savings of NLG 60 million in the first year. By the sixth year these measures together could result in savings of around NLG 400 million.

While pruning back operating subsidy the government has made a commitment to increasing real investment in NS. Until 1988, investment in NS was around NLG

700m per annum. In order to achieve a doubling of traffic by 2005 investment will have to rise to NLG 2500m per annum, expanding the intercity network from two to four tracks and rolling stock from 2250 passenger carrying vehicles (1988) to 3375 in 2000/2005. Given that half of the fleet will by then comprise of double decker vehicles (so the number of seats will have increased by 90%) only a small increase in vehicle utilisation will be necessary to achieve the doubling of traffic (see appendix three of Preston et al, 1994)

3.5.3 Conclusions

The proposals of the Dutch government will clarify the division of responsibilities between the government and Netherlands Railways; give financial and commercial independence to NS; achieve the EC directive and council regulation; and allow the Dutch government to concentrate on the formulation of an integrated transport policy, see Huisman (1993). However, without control over fares and service levels, quite how the Dutch government intends to achieve this last objective is open to question.

To be successful the government must ensure that it leaves NS as an independent organisation; continues to support and provide quality infrastructure and ensures a 'level playing field' between different transport modes.

3.6 NEW ZEALAND RAILWAYS

3.6.1 Introduction

Railways in New Zealand have undergone a radical transformation over the past 11 years. They have developed from a highly protected, overstaffed and loss making organisation into a privatised, commercial, profit making organisation, operating in a deregulated market. The evolution process resulted from, firstly, the establishment of New Zealand Railways as a Corporation, secondly, the transformation of this corporation into a Limited Company (independent of the government) and thirdly the sale to a private consortium led by Wisconsin Central in July 1993.

3.6.2 New Zealand Railways Corporation

The New Zealand Railways Corporation (NZRC) came into being with the New Zealand Railways Corporation Act 1982. It was given a commercial remit, a board of directors taken from private industry and perhaps most significant of all a well defined objective:

"To operate so that revenue exceeded costs, including interest and depreciation."

Source: Small (1993)

At the same time the deregulation of the freight market, that made up the bulk of the railway's traffic, led to the abandonment of the 150 kilometre distance limit on road freight and gave extra incentive to both rail management and unions to embrace

commercialisation and change. The realisation that the New Zealand government were serious in cutting off subsidy payments again acted as a spur to improve productivity and financial performance.

The whole emphasis during the eighties was on 'downsizing' and greater 'market led' operations. Outside transport management specialists, Booze-Allen and Hamilton were used to set the 'strategic direction' for the corporation.

Over 100 projects were set in motion, amongst them:

- (a) The use of 'hub and spoke' networks (as in the airport industry) to rationalise station and freight terminals. This resulted in a system of six hubs and 12 spokes and allowed the closure of over 300 smaller terminals.
- (b) Changes in working practices to facilitate one-man train operations and increasing average train size (20%).
- (c) The introduction of higher capacity rolling stock.
- (d) Improvements in maintenance regimes for both track and rolling stock. This resulted in a reduction of workshops from eight to two and of depots from 32 to 17.
- (e) Introduction of information technology to improve productivity and marketing efforts e.g. AMICUS, a fully integrated system to manage marketing, sales, fleet disposition and train operations.

By 1990 the NZRC was achieving operating profit, but was still short of a net profit due to a substantial debt (the result of redundancy payments and the electrification of the North Island Main Trunk). In an attempt to ease the transition of NZRC to a limited company and then to a PLC, the government transferred the debt to itself. The operating side of NZRC was set up as a limited liability company called New Zealand Rail Limited (NZRL). NZRC was left with the ownership of the land, road passenger business, Speedlink parcel service and other general assets. Land necessary for rail operations was rented to NZRL for a nominal rent.

3.6.3 New Zealand Rail Limited

Organisation Structure:

New Zealand Rail's structure is now centred around three business groups who operate as profit centres. These are Railfreight, Passenger and Operations, a resume of each follows.

Railfreight

This essentially markets freight operations for NZRL and as such is the largest revenue earner. It is composed of five market based divisions. 'Bulkflow' handles bulk

commodities such as steel, coal, fertiliser and limestone; 'forestry' transports logs, pulp, paper and timber products; 'cargo flow' dealing with bulk primary products and export and import container traffic; 'distribution services' are responsible for freight forwarders and the transport of new and used vehicles; 'freight forwarding' functions as an internal freight forwarder, consolidating wagon loads of general freight. Through joint ventures and agreements with trucking firms, Railfreight is able to offer a full nationwide network and achieve door-to-door coverage.

Passenger

This is complementary to the Railfreight business, using the marginal network capacity to generate additional revenue for the company. Passenger Group serves the following markets, commuter, long distance rail passengers, interisland passengers and cars, and cross-strait commercial vehicle traffic. Commuter services operate under contracts to respective Regional councils, whilst Intercity services operate over seven routes with no public funding.

Operations

This provides line haul services to Railfreight and Passenger Group. It manages most of the infrastructure and mobile assets of the company, for example rolling stock, ferries, track and signalling. Four divisions have been set up, each with its own responsibilities,

- Network Operations, that has responsibility for the operation and maintenance of the company's fixed and mobile assets.
- Network Services, responsible for controlling train movements.
- Engineering, that designs and builds land-based assets.
- Interisland Line, that operates three roll-on, roll-off ferries across Cook strait.

Track Access

NZRL see it as vital that they have control of their infrastructure, track standards and so costs. NZRL has thus remained a vertically integrated business. Control of access to the track is defined by the terms of the lease with New Zealand Rail Corporation for use of the land under the track. Under these terms, other operators have rights to use the track on any section for which tonnage or passenger levels fall below a specified threshold.

Any operators granted access are restrained from causing 'unreasonable interference' to NZRL's operations and have to pay for the use of track etc... on a normal commercial basis, including a reasonable rate of return. In effect track access is

minimalised and definitely not encouraged. In part, this is a reflection of the government's belief that real and effective competition already exists between road and rail, and ships and rail.

3.6.4 Results

Between 1982 and 1989, New Zealand Railways lost about 25% of its freight tonnage, however, only 40% of this decline was due to road substitution with 60% of the fall due to the recessionary climate. The current freight market share of inter-regional traffic is estimated to be 30%.

A look at performance indicators demonstrates that NZRL has improved its productive efficiency quite substantially from 1982. Staff productivity has increased by 200%, average train size has increased by 21% and the wagon fleet has fallen by 69%. The emphasis has been on greater utilisation of rolling stock coupled with increases in staff productivity.

During the same period real rail freight rates have fallen by 50% which indicates that the savings generated through this period have been passed on to consumers, improvements in allocative efficiency as well as in productive efficiency have therefore taken place.

3.6.5 Summary

The results enjoyed by NZRL have been accomplished over a 10 year period. The first eight years were spent 'commercialising' and 'downsizing' the rail operations. The government was committed to freeing not only the transport market but also the economy as a whole. It placed particular emphasis on freeing the railway's labour market, removing the Railways from the State's centralised wage fixing system, limiting the right to strike and giving a stronger legal emphasis to labour relations. This was accompanied by managements' pressure to change working practices e.g. two man trains. Similarly the British government has identified changes in both the labour market and in working practices as a key area for improving productivity in the rail industry (see Foster, 1994).

Commercialisation was further helped with the introduction of a market-orientated structure e.g. Freight, Passenger, Property etc.... This meant that very clear business objectives could be set and accountability improved. As Small (1993) says,

"The combination of accountability, individual responsibility and inter-group competition contributed to a new management ethos within the rail system."

Once again this is similar to events in the UK. Here BR was introducing sectorisation in an attempt to improve accountability for each of its business sectors and to improve information flows on costs, revenues and subsidy payments. BR enjoyed considerable productivity gains but unlike NZRC was unable to achieve an operating profit.

It is at this point that BR and New Zealand railways diverge. The rail operations side of NZRC was hived off to form a limited liability entity, NZRL, which has now been

privatised. The main difference between the privatisation of BR and that of NZRL is that NZRL has been privatised as a vertically integrated business. NZRL feel that an infrastructure company, at least one step removed from the market, would be unable to judge and respond to market requirements thus leading to investment in areas which are not commercial priorities. Furthermore, the New Zealand government feels that there is sufficient competition between rail, road and air to encourage efficiency within the railway industry. The objective it set the NZRC in the eighties is proof of its belief in this.

3.7 SWEDISH RAILWAYS

3.7.1 Introduction

The state railways original function was to connect private rail systems that served local regions, resulting in a national and regional network. Gradually, the state took over private networks as they ran into deficit. With road development and motorisation this trend increased until by 1965 privately-owned lines accounted for less than 5% of route kms and by 1991 for none.

Until 1979 the national network operated without subsidy, and the whole rail system was one of the most efficient and cost effective in Western Europe (BRB and The University of Leeds, 1979). However, in the eighties a combination of falling market share and unclear management objectives led to spiralling deficit payments and falling investment. Public and political concern about the lack of investment and growing levels of congestion within cities led to the 1988 Transportation Act.

3.7.2 The Transportation Act 1988

The act was based upon a 'road model', the main features of which are summarised in appendix three of Preston et al (1994).

- (i) The rail network was divided into a trunk system of main arteries and county lines.
- (ii) Rail infrastructure became the responsibility of a new state agency Banverket (BV), who leased track access to train operators on a marginal social cost basis. BV has responsibility for new investment, maintenance and acts as regulator over safety and scheduling matters.
- (iii) Statens Jarnvagar (SJ) became a train operator and marketing organisation, for both passenger and freight operations. It retained ownership of terminals and rolling stock, also maintaining operating rights over trunk routes for passenger traffic, and trunk and county routes for freight traffic (excluding iron ore).
- (iv) The 24 county public transport authorities (CTA's) would set the level of passenger service to be operated on county lines and could choose contractors other than SJ to operate local and regional services.

- (v) If SJ or the CTA's did not wish to exploit their transportation rights (not run a service) then the government (trunk lines) and BV (other lines) can award such rights to other operators.
- (vi) Infrastructure charges paid by train operators would be consistent with the pricing regime employed by the road authority, namely marginal social cost.
- (vii) The state would provide grants for new investment.

BV's organisation is highly decentralised, being split into five regions and 21 districts. There is also an Industrial Division that deals with purchasing, production and storage of material, and an Independent Railway Inspectorate responsible for safety checks and accident investigations. SJ's organisation has moved from a regional to a product based set up, with the creation of four main divisions: passenger, freight, mechanical and real-estate.

Although BV and SJ are two separate organisations the distinction set out in the Transportation Act 1988 is sometimes blurred. Timetabling is currently carried out by SJ, traffic control is operated by SJ using BV's infrastructure whilst telecommunications are used jointly by both operators. The first two points put at risk the potential for introducing serious competition for the provision of Swedish rail services. The latter has been resolved technically with assignment of exchange installations and interconnecting cables to BV, whilst cables and facilities to portable equipment for direct use were taken by the user (either BV or SJ).

3.7.3 Financial Arrangements

As outlined earlier all train operators pay an access charge equal to the marginal social cost. The charge is in two parts (i) a fixed element, expressed as a rate per rail vehicle axle (ii) a variable element, related to vehicle tonne-km, differentiated by type of vehicle to reflect different amounts of wear and tear on the track structures. The charge is a marginal social cost charge, so the element also includes socio-economic costs e.g. diesel exhaust pollution.

Both SJ and BV still receive quite substantial subsidies from the government. In SJ's case these are for the operation of 'socially necessary' passenger and freight services, a situation similar to the proposed 'franchise subsidies' in the UK. SJ is still expected to make a profit after subsidy, and in 1990 achieved profits of SEK681 m of which rail accounted for SEK372 m. The subsidy payment for that year amounted to SEK1,348 m.

In 1990 SJ made a track access payment of SEK 665m to BV. To cover the differences in BV's incoming and outgoings, the government funds BV through an annual appropriation. This has steadily increased from 1988 onwards, partly because of increases in investment (see Table 3.8).

Table 3.8: Government Support To Bankervet

Year	SEKm
1988	3275
1989	4035
1990	4300
1991	5250
1992	6500

Source: Preston et al (1994)

The government also pays subsidy to CTA's where they have taken over operating rights from SJ.

3.7.4 Franchising

Although franchising is confined to county routes, the results make interesting reading in terms of their implication for franchising in the UK. According to Ridley and Terry (1992):

"Since the reforms under the 1988 Act, most CTA's have taken an active interest in the development of cost-effective rail services and have called tenders for the provision of railway services in accordance with a specification tailored to their view of local/regional needs."

So far two principal challenges have arisen to SJ's monopoly of provision, BK-Tag and Linjetag. Both already operate bus services under contract for CTAs in south and central Sweden and provide maintenance services for other bus companies. Although both firms bid for contracts, only BK-Tag was successful in winning contracts in (1) Smaland and Halland (1990) and (2) Borlange (1992).

SJ has responded to the competition by cutting its tender prices by an average of 30%. It has since secured all contracts for CTA operations, and recently displaced BK-tag in its two franchise contracts. However, the initial success of BK-Tag is proof that competition can exist via a franchise despite the existence of barriers to entry such as, economies of experience and access to existing maintenance services.

BK-Tag combated these barriers through changing inflexible working practices, reducing maintenance costs and integrating their present road operations and maintenance facilities with those of rail. These policies resulted in BK-Tag's train crew of 43 operating the same services that previously used 250 employees of SJ; BK-Tag achieving higher vehicle utilisation than SJ did and an estimated labour productivity gain of 10% via a renegotiated pay structure. BK-Tag's vehicle utilisation was 130,000 km p.a. per car compared to SJ's 90,000 km p.a. per car. Such results are indicative of the potential productivity and operating gains that could occur in a privatised BR.

These results have encouraged the Swedish government to the extent that they are proposing to extend the franchise system to regional and longer distance services

which at the moment are the sole preserve of SJ. Whether the CTA results can be replicated is a question that has to be asked. For the CTA operations, the bulk of the rolling stock was provided by CTA, thus helping to reduce the barriers of entry for BK-Tag. CTA operations are also small and less complex in nature, which allowed savings in training costs and overnight allowances. As yet no such proposals have been put forward for the provision of rolling stock on other routes and a further worry must be the strategic role that SJ has in timetabling.

3.7.5 Summary

The Swedish Transportation Act 1988 is in some ways similar to the proposals contained in the Railways Act 1993. The separation of infrastructure from operations, realistic charges for track access, the payment of subsidy for the operation of 'socially necessary' services and the use of a franchise system to reduce costs, improve productivity and services. However, overall the Swedish restructuring does not go 'as far' as that proposed by the Railways Act in terms of creating a competitive environment. The Act ensures that all of BR's services, both mainline and local, will be franchised and eventually opened up to further competition through 'open access'. Rolling Stock companies (ROSCOs) will reduce the barriers to entry formed by rolling stock, whilst the timetable function of Railtrack and the presence of an independent regulator ensures strategic barriers to entry are minimalised.

Although the Swedish government envisages franchising the whole rail network and has already scheduled 'open access' for the 1st January 1995, both these goals are still very long term. At this point the emphasis that Sweden places upon a national transport strategy should be noted. Transport is given a major role in the management of the national economy and the relationship between road and rail policy is continuously assessed for consistency of treatment. Great emphasis is therefore placed upon assessing both road and rail by the same socio-economic criteria, so creating a 'level playing field' for both subsidy and investment, and making the real cost of using both modes transparent to users.

3.8 AMTRACK

3.8.1 Background

From 1970 onwards railroads in the USA have been undergoing a process of reorganisation and reform. The impetus for change was brought about by a financial crisis facing railroads in the north east of the USA. Between 1947 and 1970, freight train miles had dropped by 31%, from 616 billion to 427 billion. During the same period Inter-city passenger miles fell 84%, from 39.9 billion to 4.6 billion. This fall in traffic was the result of:

- (1) Tight regulation by the Interstate Commerce Commission (ICC), that required all tariffs to be published and be made available to all shippers under the same terms and conditions. Closure procedures under the ICC were also elaborate and time consuming, extending unnecessarily the lives of unprofitable lines.
- (2) The federal programme of highway construction.

In response to the situation facing passenger railways, Congress passed the Rail Passenger Service Act 1970, which created the National Railroad Passenger Corporation that trades under the name Amtrak. The government also proceeded to deregulate freight in 1980 with the passing of the Staggers Act (see Grimm and Gordon, 1991).

3.8.2 Amtrak

Amtrak is a passenger train operating company that owns locomotives, rolling stock, and a majority of station and terminal facilities. It now owns 450 miles of track in the north-east corridor (Washington-Philadelphia-New York-Boston), but makes track access payments to about 20 freight railroads for the use of another 24,000 miles of route.

Amtrak has operated as a commercial business since its formation, with the backing of federal subsidies. Its performance has been impressive, according to Ridley and Terry (1992),

"... in 1991, it recovered 79% of its costs from revenues of \$1.4 billion (up from 65% in 1987). The Corporation employs 25,000 people, operated 6.3 billion passenger miles in 1991 and achieved an average 77% on-time arrival."

The track access charges paid by Amtrak are based upon an 'avoidable costs' formula based mainly upon gross tonnage and speed. To cut down on contract costs this formula has been converted to a flat mileage rate, updated for inflation. The charging system is clear and relatively simple, something the Railtrack charges are not.

New investments are paid for by the party who benefits from them. If both parties benefit then costs are shared. The access contracts between Amtrak and the freight companies cover other eventualities. The freight railroads are required to maintain tracks and structures to the same standard as existed when Amtrak commenced service. The freight railroads are obliged to provide emergency assistance in the form of rolling stock and maintenance, if Amtrak's operations face severe disruption. They also have to compensate Amtrak for delays to their schedule caused by track maintenance or poor quality track.

In addition to Amtrak, there are 12 commuter railroads in operation serving major conurbations. They are typically under 300 miles and only recover 40% to 60% of costs from revenues. Such services are run as franchises and as such give useful insights into the problems of rail franchise agreements. A series of case studies by Nera (1992) examined two USA commuter franchises, the Massachusetts Bay Transit Authority (MBTA) and the Southern California Regional Railway Authority (SCRRA). The results of these case studies are presented in section 4.3 of this working paper.

3.8.3 Results

The original aim of Amtrak was to provide a skeleton Inter-city service on a reduced subsidy level. By 1991 Inter-city passenger miles had increased by 37% from 4.6 billion in 1970 to 6.3 billion, whilst its cost recovery ratio increased to 79%. The goalposts have now shifted and its objective is now to operate without any federal support; a goal it only sees as possible through the extension and expansion of services; hence the corporations' current 15 year capital investment plan totalling \$17.6 billion.

These results are interesting but from a UK perspective of more interest is the relationship between Amtrak and the freight operators, a relationship that can be likened to that between the TOC's and Railtrack.

Unlike Railtrack's proposals for track access charging, the charges levied by the freight operators are based more on negotiation than the product of detailed cost studies. Whether this will be the long term outcome for the UK is open to speculation.

Initially, Amtrak and the freight operators attempted to tie one another down to specific obligations, charges etc.... Experience has shown that this can result in costly conflicts and in recent years the attitude has shifted to one of co-operation in the realisation of the economic and financial benefits that result e.g. planning maintenance and investment. The extent of such an initial conflict in the UK is difficult to judge. Part of the problem in the USA was that freight operators' saw conflict in the allocation of train paths and the quality of infrastructure required by both operators. The impartiality of Railtrack and the Regulator should help to avoid any such conflict, although it is quite probable that disagreements about types of investment and service quality will arise early on in the relationship.

Amtrak's policy of co-operation can be illustrated by its Incentive Payment scheme it operates with the freight railways. These payments are designed to encourage competent 'running time' and are paid on a train-mile basis. Amtrak sees such payments as beneficial because they reduce train crew costs, improve utilisation of rolling stock, reduce fuel consumption and give greater satisfaction to customers. Payments are on a scale and penalties (negative payments) are awarded for late running. Railtrack has initiated a similar scheme, whereby Performance Payments reflecting Railtrack's contribution to the levels of reliability and punctuality achieved, will be paid by OPRAF.

3.8.4 Summary

Amtrak has succeeded in fulfilling the objectives it set itself in the 1970's but is still a long way from its long term aim of profitability, despite paying for its track access at avoidable cost only. The greatest success has been that enjoyed by the freight companies who, through deregulation, increased their profitability which in turn has allowed them to contribute to investment in track and signalling.

4. CONCLUSIONS

The first part of this paper described the proposals for rail privatisation in Great Britain. In the second part these proposals were contrasted with the experience and proposals in other countries around the world. Privatisation has already taken place in Japan, New Zealand and Argentina, and in the latter cases involved (very long) franchises. In all cases however privatisation was on the basis of vertical integration of infrastructure and train services, with little or no scope for 'on the track' competition.

By contrast, European proposals centre on the separation of infrastructure from operations, although only Sweden had actually carried this out before Britain. In Sweden there is some experience of franchising, with the mixed results that although there has been little competition, cost reductions do seem to have been achieved. As yet there is no 'open access' operation on any significant scale in Sweden. In this aspect the British government's proposals are truly innovative. Therefore, there is little experience from which to judge its effects anywhere in the world.

In conclusion, it is not possible to reach any firm predictions of the results of the British rail privatisation on the basis of practice elsewhere. What is clear is that in designing a very complex and innovative form of privatisation to maximise the potential for competition, the British government has introduced many features which may create serious problems. Whether these are so serious as to outweigh the benefits of increased competition will only be known after many years of experience.

APPENDIX ONE

Franchise	Train miles(m)	Pass. (m)	Pass.Miles (m)	Average Load	Pass.Rev (£m)	Other Rev. (£m)	Staff
ECML	10.9	10.5	1,812	166	209.0	11.0	7,325
Gatwick Express	1.4	5.0	135	96	n/a	n/a	356
Great Western	8.8	15.9	1,351	154	158.9	11.1	6,771
Anglia	1.8	3.8	279	155	n/a	n/a	443
Cross Country	10.6	11.2	1,247	118	n/a	n/a	3,589 ¹
Midland Main Line	3.4	6.0	486	143	n/a	n/a	---
WCML	13.2	13.6	2,203	167	239.2	20.0	9,666
Isle of Wight	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LT & S	n/a	25.8	n/a	n/a	56.3	2.8	1,247
Thames ²	6.7	21.9	n/a	n/a	43.5	2.2	2,147
Chiltern	---	---	---	---	---	---	---
Great Eastern	7.4	46.5	n/a	n/a	100.3	11.8	4,177
Kent Services	16.7	112.5	n/a	n/a	205.0	14.4	7,464
Northampton & North London	5.3	35.2	n/a	n/a	50.6	4.7	1,350
S.London & Sussex Coast	13.8	84.1	n/a	n/a	151.1	13.8	5,660
South Western	22.6	110.4	n/a	n/a	230.3	9.1	7,603
Thameslink	5.7	20.2	n/a	n/a	50.3	1.6	580
West Anglia & Great Northern	10.7	45.9	n/a	n/a	94.6	2.5	2,260
ScotRail	19.2	49.2	926.8	48.3	81.6	n/a	9,344
Cardiff Valleys Line	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Central	18.4	32.7	91.7(?)	4.9(?)	67.9	16.9	6,147
MerseyRail Electric Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a
North West	17.2	62.1	740.8	43.1	65.1	---	9,162
North East	17.2	30.7	575.9	33.5	48.9	---	6,002
South Wales & West	11.2	19.8	432.3	38.5	39.6	---	4310

¹ This is a joint figure for both MML and Cross Country

² Joint figures with Chiltern

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