

SUPPLEMENTARY SUBMISSION TO THE PRODUCTIVITY COMMISSION RE ENERGY EFFICIENCY

Dr Philip Laird, University of Wollongong December 2004

Introduction

This submission is in response to a question raised at the Public Hearing held in Sydney on 16 November 2004 re contestable land freight. Acknowledgement is made of UOW and Rail CRC support for this research, however, the views are those of my own.

Please find as an Appendix to this supplementary submission a paper *Rail freight competition and efficiency gains in Australia* from pages 512-528 of the Proceedings of the 36th Canadian Transport Research Forum (CTRF) Vancouver May 2001 that addressed this question. Although significant changes have been made since then including the sale of National Rail and FreightCorp in February 2002 to Patrick and Toll, and the release of the AusLink White Paper in June 2004, much of the description of substandard rail infrastructure and conclusions still hold. This includes (page 525): *"The major constraints to rail assuming more of Australia's land freight task is considered to be the severe speed weight restrictions imposed by the track linking Australia's three largest cities, and, lack of competitive neutrality."* Over-regulation and lack of harmonization between the States is a further constraint to rail winning more freight.

Contestable land freight

Table A updates Table 1 in the CTRF paper and includes land freight tonnages as well as the growing rail and road freight tasks for 2002-03 in Australia are shown in, in billion tonne kilometres.

In 2002-03, the Australian rail freight task was just over 158 billion tonne kilometres (btkm). Most, but not all of the bulk rail freight task (136 btkm) is captive to rail. For the rail freight task, up to say 8 btkm (including say 4btkm intermodal interstate) is regarded as being subject to transfer from rail to road. This could occur:

- A. with the further (conditional) relaxation of mass limits for heavy trucks proposed under the National Transport Commission (NTC) third generation charges due for 2006,
- B. the new NTC charges are not appreciably increased for the heavier long distance trucks (including six axle articulated trucks with a GVM of 42.5 tonnes and B-Doubles),
- C. if international oil prices return to lower levels,
- D. extensive abandonment of grain lines in NSW, Vic, SA and WA, and,
- E. if the AusLink White Paper proposed investments for rail to 2009 are not increased for rail. This is to compensate for the present omission of rail funds for the Brisbane - Cairns corridor and the reallocation shortly before the 2003 Federal election of \$75 million per year of regional transport funds (some of which could have been used to upgrade rail) to local Councils (which was apparently designated for road works).

TABLE A AUSTRALIAN LAND FREIGHT TASKS 2002-03
Million tonnes Billion tonne kilometres

Rail		
Coal	226	44.4
Ore	223	66.8
Grain (poor harvest)	13	5.1
All bulk	529	136
All non-bulk	16	22
Total rail freight	545	158
<i>(Interstate rail `</i>	<i>13.4</i>	<i>25.5)</i>
Road		
Light Comm. Vehicles	121	6.7
Rigid trucks	707	30.4
All articulated trucks	725	115.65
Total road freight	1553	153

References: For rail, the Australasian Railway Association (ARA) Australian Rail Industry Report 2003 For road. Australian Bureau of Statistics Survey of Motor Vehicle Usage for 12 months ending 31 Oct 2003.

The road freight task includes over 45 btkm for freight movements in smaller vehicles (LCVs, rigid and artic. trucks under 40 tonnes) which may be regarded as captive to road. At least 7 btkm of line haul interstate road freight, and a further 5 btkm of intrastate road freight is regarded as being subject to potential transfer to rail if:

- A. the NTC charges for heavier trucks were replaced by mass distance charges at a level to ensure competitive neutrality (at least in Australia's populous zone),
- B. better regulation of the road freight industry,
- C. recovery of most of the significant external costs from road freight,
- D. .if international oil prices continue to increase,
- E. interstate mainline rail track infrastructure was upgraded to improve the speed - weight performance of freight trains with some 250 to 350 km of track straightening,
- F. an inland Melbourne - Parkes- Brisbane railway is developed, and,
- F. some extensions are made to intrastate track.

Note that completion of the Alice Springs to Darwin railway (1420 km) with a transfer of say 0.25m tonnes from road to rail lead to a shift of only about 0.36 btkm.

It is of interest that Mr Tony Friedlander, CEO of the New Zealand Road Transport Forum in giving a paper at the Towards Sustainable Land Transport Conference at Wellington NZ on 24 November 2004 considered that at most 10 per cent and more likely 5 per cent of land freight in New Zealand is contestable between road and rail.

APPENDIX Rail freight competition and efficiency gains in Australia

Proceedings of the 36th Canadian Transport Research Forum Vancouver May 2001

pages 512-528 Dr Philip Laird, Associate Professor

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INTRODUCTION: THE MAJOR CHANGES IN THE 1990s

In July 1996, rail freight services were offered by six Government and several private operators. The Government rail systems were then as follows.

* The four State systems of Queensland (Queensland Rail or QR), New South Wales (Freight Rail Corporation (FR) operating over tracks owned by a Rail Access Corporation), Victoria (V/Line Freight), and, Western Australia (Westrail or WR).

* The Commonwealth (Federal Government) system, the Australian National Railways Commission (Australian National or AN) formed in 1975 to operate, inter alia, rail services in South Australia and Tasmania.

* National Rail Corporation (National Rail or NR), formed in 1991 to provide interstate rail freight services, and jointly owned by the Federal, NSW and Victorian Governments.

The main private operators, with freight tasks in excess of 10 btkm per annum in 1996, were two iron ore railways in the Pilbara region of WA. These were BHP Iron Ore and Hamersley Iron (HI). There were several smaller private rail freight operators.

Following Adelaide - Melbourne gauge standardisation in 1995, a new Melbourne - Perth rail freight service was offered by a private company (SCT) using, in part, AN locomotives, and track access provided by AN, WR and the Victorian authorities. This change was in part due to a 1995 national Competition Principles Agreement that, inter alia, provided conditional third party access rights to government rail track. The present arrangements include a National Competition Council (NCC) and a 'one shoe fits all' type approach to various entities including electricity grids, gas pipelines and railways. Further rail competition was introduced in 1997 when Toll (initially TNT) commenced Melbourne - Perth rail freight services.

In 1997, the South Australian and Tasmanian freight operations of AN were sold by the Federal Government to two different companies, each owned by United States interests (Genesee and Wyoming, and, Wisconsin Central who also owned, in part, New Zealand Railways which was sold in 1993). The interstate track in South Australia under the control of AN was transferred to a new Australian Rail Track Corporation (ARTC) in 1998. The ARTC is owned by the Federal Government and offered track access at posted rates to all train operators, and assumed responsibility for arranging track maintenance with some limited upgrading. Following intergovernmental agreements signed in late 1997 at a historic 'Rail Summit' of Australia's Transport Ministers (the Australian Transport Council), the ARTC entered into an agreement that year, and renewed in late 2000, with

the Victorian Government to provide access to interstate tracks in that State, and to maintain these tracks. The ARTC was able to reduce freight train transit times by undertaking deferred track maintenance and basic upgrading. However, by February 2001, none of Queensland, NSW or WA had reached agreement with the ARTC.

In 1999 V/Line Freight was sold to Freight Australia, in part owned by Freight America. Westrail was sold by the WA Government in late 2000, when enabling legislation finally gained passage in the Upper House in WA. Access rights to, and pricing of, the interstate standard gauge track in WA remains an issue.

The Commonwealth, as the major Government shareholder in National Rail, had proposed privatisation in November 1996. However, the former Victorian Government raised problems with the Dynon terminal in 1997-98, and, in 1999, new problems arose. One such problem was whether other State Governments, such as Queensland or NSW, could bid for NR. In April 2000, the Commonwealth moved to exclude State Governments from buying NR, but a sale had not occurred by February 2001.

The NSW Government stated in 2000 that its rail freight operator FreightCorp would be sold, and this was subject to an inquiry of an Upper House Committee in late 2000. The Committee recommended in part that the sale of FreightCorp proceed in tandem with the sale of National Rail, and that half the sale proceeds be applied to improving regional track in NSW. Queensland Rail is currently not for sale.

The Australian road freight industry also has sectors that operate at world best practice. During the 1990s, truck operators have taken advantage of relaxation of mass limits, and increased expenditure on roads by all levels of Government, which in 1997-98 exceeded \$7 billion (Bureau of Transport Economics (BTE), 1999a).

The Sydney – Canberra Speedrail proposal that was under examination by the Government and the private sector up to late 2000 and is now abandoned, and the long proposed Alice Springs - Darwin railway, will not be considered in this paper.

The growing land freight task

The growing rail and road freight tasks in Australia are shown in Table 1, in billion tonne kilometres. The complete 1998-99 rail data set has not been made available by Government agencies to date. There are severe limitations on the quality and quantity of data publicly available on land freight in Australia. Land freight data deficiencies were acknowledged by the Productivity Commission (1999), and a Senate Committee (2000) recommended that improvements be made to transport data, and related energy use and greenhouse gas emissions.

Australia's Government rail systems had an annual freight deficit of some \$525 million in 1989-90 (Industry Commission, 1991). Of this amount, over \$300 million was due to losses in interstate rail freight. By the mid 1990s, the aggregate rail freight loss had been reduced to the order of \$200 million (Bureau of Industry Economics - BIE, 1995).

TABLE 1 AUSTRALIAN LAND FREIGHT TASKS

	Billion tonne kilometres		
	1990-91	1994-95	1998-99
<i>Rail Govt coal</i>	23	28	32-34
Subtotal 'Govt.' rail *	52.9	61.6	67.4
Iron Ore – Pilbara	34.5	47.3	49-51
Subtotal Non-Govt. rail**	35.3	48.2	58-62
Total rail freight	88.3	109.8	125-129
Road B-Doubles		9	19
Road trains		15	20
All articulated trucks	63	89	99
Total road freight	88	119	127
Interstate rail	14.4	16.6	19-21
Interstate road	22	26	28-32

References include: For rail, SCNPM, BTE (Transport Indicators and 1999b), Annual Reports, some estimates.

For road. Australian Bureau of Statistics Survey of Motor Vehicle Usage

* Includes QR,FR, NR and WR and V/Line Freight up to 1994-95

** Includes SCT, Toll and V/Line Freight in 1998-99

In 1998-99, the Australian rail freight task was approximately 127 billion tonne kilometres (btkm), and the road freight task for articulated and rigid trucks along with light commercial vehicles was estimated (ABS, 2000) at 127 btkm. For the rail freight task, up to 10 btkm is regarded as being subject to transfer from rail to road. This could occur with the conditional relaxation of mass limits for heavy trucks now under way in Australia, if international oil prices return to lower levels, National Road Transport Commission (NRTC) second generation charges introduced as of 1 July 2000 are not appreciably increased for heavier long distance trucks, and, if current Federal land transport funding levels continue. These levels are generous for the National Highway System and poor for national rail track upgrading programs.

The road freight task includes over 40 btkm for freight movements in urban areas which may be regarded as captive to road. At least 5 btkm of line haul interstate road freight, and a further 5 btkm of intrastate road freight is regarded as being subject to potential transfer to rail; if the NRTC charges for heavier trucks were replaced by mass distance charges at a level to ensure competitive neutrality, interstate mainline rail track infrastructure was upgraded to improve the speed - weight performance of freight trains, and, some extensions were made to intrastate track.

TURNING RAIL FREIGHT DEFICITS INTO PROFITS

In 1998-99, QR, FC and WR showed combined freight operating profits of \$224 million (down from \$294 million in 1997-98 due in part to the problems with the Asian economy). This profit far outweighs ongoing NR losses (reduced from over \$300 million a year to below \$30 million a year in the face of freight rates falling some 16 per cent from 1991-92 to 1996-97 with increasing rail - rail and severe rail - road competition), and, Community Service Obligation payments for the haulage of some intrastate rail freight including \$80 million in NSW.

Accordingly, the 1990s saw aggregate Government rail freight deficits turned into rail freight profits. This has made rail privatisation a more attractive prospect. From Table 1, in 1990-91, private rail freight accounted for about 40 per cent of Australian rail freight.

With the changes outlined above, the percentage of private rail freight operations had reached about 52 per cent by 1998-99. When Freight Corp and National Rail have been sold, about 75 per cent of the Australian rail freight task will be private.

AUSTRALIAN RAIL FREIGHT PERFORMANCE

All rail systems gained major improvements in productivity with the aggregate productivity of former Government railways rising from 1.2 to 2.2 million net tkm (ntkm) per freight employee between 1990-91 and 1994-95 (Steering Committee on National Performance Monitoring - SCNPM data). Rail freight productivity gains have been recorded by various Government agencies such as the SCNPM, BIE and BTE and the Productivity Commission (1999). Other references include this writer (Laird, 1998).

Performance at or near world best practice

The iron ore railways in the Pilbara operate at world best practice with respect to operating costs and energy efficiency, and their track was given an A+ rating in the National Report Card on Infrastructure released December 1999 by the Institution of Engineers, Australia. The high efficiency is due in part to world class track which has the characteristics of good alignment, excellent formation, along with sleepers and a weight of rail capable of high axle loadings. Efficient operations are also assisted by updated locomotive fleets including Dash 8 locos and new AC traction locos with BHP Iron Ore, and Dash 9 locos with Hamersley Iron (HI), plus well maintained wagon fleets.

The unit cost of the Pilbara iron ore rail operations is understood to be appreciably less than one cent per ntkm, with high aggregate energy efficiency of at least 8.77 ntkm per MJ (this being the aggregate 1994-95 energy efficiency of all non - Government rail operations in Australia noted by Apelbaum, 1997). This energy efficiency has since increased. For BHP Iron Ore, it now takes less than one litre of diesel to move one tonne of iron ore a distance of 426 km from Mt Newman to Port Hedland, with an energy efficiency of at least 12 ntkm per MJ.

The development of the Pilbara iron ore railways in the 1960s and escalating tonnages are of interest. Here, the HI mainline to Mt Tom Price was originally intended for 4.5 mtpa and by 1978 had been substantially upgraded and extended to Paraburdoo, and was operating at 47 mtpa (Vanselow, 1989). The BHP iron ore mainline was also initially built for 5 mtpa, and then substantially upgraded for growing tonnages. Iron ore tonnages continued to grow throughout most, but not all, of the 1990s. During the 1990s, the BHP and HI track was further extended. Access issues in the late 1990s also posed interesting legal questions, with the prevailing view to date being that HI's railway is part of their production process, and, that 'normal' third party access rights to their track do not apply.

Queensland's sugar railways, operating on a 610 mm gauge, also show characteristics of world best practice, including innovation in track work, safeworking, and intermodal operations. During June to December of each year, they now move over 35 million tonnes of sugar cane.

Queensland Rail's export coal haulage, mostly in Central Queensland under electric traction (25,000 volts AC) on narrow gauge is also regarded as approaching world best practice, and was given an A- rating in the IE Aust Infrastructure Report Card. This system moved about 100 million tonnes of coal in 1998-99 at roughly 5 ntkm/MJ. There is scope for increasing train length on the Blackwater - Gladstone system to the heavier trains used in the Goonyella System, which will require further grade easing near Blackwater.

NSW Hunter Valley coal operations also operate at good practice (Infrastructure Report Card Rating B+), with rail freight rates falling 16 per cent in real terms (Senate Select Committee on NCP, 1999, p80) but along with recent resignalling works, there is scope for grade easing on Whittingham Bank. However, rail haulage of coal to Port Kembla remains a textbook example of difficult working with a combination of rail congestion in Sydney, and track with steep ruling grades and excessive curvature.

Adelaide - Perth freight trains are Australia's best interstate operations, and allow for double stacked containers. As noted (Senate Select Committee on National Competition Policy, 2000) rail freight rates have fallen some 40 per cent on the Melbourne - Perth corridor between 1991-92 and 1996-97. Along with rail competition, a major factor in this reduction was Adelaide - Melbourne gauge standardisation completed in 1995 which removed the need for a bogie exchange in Adelaide for Melbourne - Perth freight trains. Improved National Rail performance with new locomotives and a better wagon fleet have also helped. Without Adelaide - Melbourne gauge standardisation, the likelihood of rail competition on the Melbourne - Perth corridor would have been remote; also, sea provides some competition on this corridor.

Queensland Rail's Brisbane - Cairns \$590 million Mainline Upgrade (MLU) Project has significantly improved axle loadings, increased loads and reduced transit times. However, further realignment at locations such as Aminungo is required to realise the full

benefit of the proposed resleeper programme between Rockhampton and Townsville. Infrastructure Report Card Rating B-.

The 1992 - 1997 MLU included 120 km of high quality rail deviations with easy grades and curves between Brisbane and Cairns. The MLU improved rail freight services including livestock trains which are now unique to Queensland. It also allowed a NQ Direct service operated jointly with NR to bring fruit and vegetables from North Queensland to Sydney and Melbourne markets. The track upgrade was also needed for the tilt train passenger service that commenced regular Brisbane - Rockhampton services in 1998. The new Queensland tilt trains have been well received by the travelling public, and carried 600,000 people within the first 20 months. By the end of their first year, patronage levels had doubled from that of the former Inter City Electric trains. During a trial on 23 May 1999, a Queensland tilt train broke the Australian rail speed record when moving at 210 km per hour.

Performance below world best practice

Much attention has been focussed on National Rail's financial performance, which has failed to reach the initial expectations of making an outright profit within five years of commencement of operations in February 1993. As predicted by this writer (Laird, 1994) such a goal was unlikely given Australia's extensive 'highway subsidisation' and relatively poor standard of interstate mainline track. The impact of competition policy has further eroded NR's ability to make a clear profit, despite the progress made towards improvements in productivity, as outlined by Ernst & Young (1998 - who noted fuel use at 4.04L/000gtkm which is somewhat higher than USA Class I railroad aggregate use at 3.5L/000gtkm). In respect of track condition, the IE Aust Infrastructure Report Card noted, inter alia, *Melbourne to Sydney to Brisbane - poor track condition, steam age alignments [and some signalling] severely impact on transit times and make the running of a rail operation almost non viable. Rating F -*

The National Transport Planning TaskForce (1995) considered that an investment of about \$2 billion was necessary to bring the Melbourne - Sydney - Brisbane rail corridor towards US Class I railroad standards. This is appreciably less than the \$4 billion outlaid in today's terms on the Hume Highway linking Melbourne and Sydney over the last 25 years (Laird 1999), and, the \$3 billion now being invested to upgrade the Pacific Highway.

Severe speed weight restrictions on this corridor coupled with rail congestion within the Sydney metropolitan area are two factors resulting in rail having a low modal share of about 20 per cent on this corridor. A potential source of more rail freight is the Melbourne - Brisbane land freight market, which in view of its length should be dominated by rail. A further track infrastructure problem requiring attention is residual gauge standardisation.

SIX RAIL INQUIRIES

No fewer than six government rail inquiries have been undertaken between 1997 and 2000 in Australia, as follows.

1. The House of Representatives Standing Committee chaired by Mr Paul Neville, MP. This inquiry received 117 submissions, and made 16 recommendations consistent with its 1997 report on roads 'Planning not Patching' and the NTPT (1994,1995) reports.
2. The Rail Projects Task Force (1999) whose report was released in May 1999 with 30 recommendations.
3. The Productivity Commission's inquiry into progress in rail reform. A draft report, was released in March 1999 and the final report completed in August 1999 had its release delayed to April 2000.
4. The NSW Public Works Committee inquiry into the Tilt Train that reported in November 1998, with 14 recommendations.
5. The 1999 inquiry of the Environment, Resources and Development Committee of the South Australian Parliament into Rail Links with the Eastern States, with 9 recommendations.
6. A NSW Legislative Committee (2000) inquiry into the proposed Privatisation of Freight Corp with 15 recommendations.

The government response time to these reports varies from less than a month (South Australian Government) to over 28 months (no response to the NSW 1998 inquiry by 2001). A formal response to the Neville Report was delayed to April 2000, when a response was also made to the Rail Projects Task Force and Productivity Commission reports. The three Federal rail inquires agreed that there is a need for a national integrated transport policy, to upgrade '*...substandard national track*', lift Federal rail track investment from \$250 million, and harmonise rail operating standards.

The response of the Federal Government to its land transport inquiries was very limited. The response included formation of a National Transport Secretariat and Australian Rail Operations Unit in place of a National Land Transport Commission. The response also confirmed ongoing generous treatment for the National Highway System, but denied additional funding to improve national rail track. The Productivity Commission recognised that rail reform will also require road reform, and to this end, recommended an inquiry into road provision, funding and pricing. However, this was rejected by the Federal Government in its April 2000 response.

PRESENT OVERVIEW

Despite the rail reform of the 1990s, including improved efficiency, the formation of the ARTC in 1998, and part privatisation, as noted by the government inquiries:

- A. Government's rail freight unit costs remain above USA World Best Practice costs. However, the cost of running freight trains over substandard national track is expected to be higher than running freight trains over US Class I high standard railroad track.
- B. The energy efficiency of 'Government' rail freight trails that of US Class I railroad operations, and, improvements in track infrastructure and competitive neutrality have the potential to save over 250 million litres of diesel a year by 2015 (Laird, 1998). A transfer of some interstate road freight to rail was noted as one of five 'no regrets' measures to reduce greenhouse gas emissions by the BTE (1996).
- C. The 'surprising incursion' of road into land freight tasks well suited to rail in the 1980s (Nash, 1985) still persists in intercapital city land freight. It was also present until the late 1990s with the movement of some coal to Newcastle and Port Kembla in NSW.
- D. In the absence of a National Land Transport Commission, the desirability of a National Rail Transport Commission to promote rail reform.
- E. Low government investment (Federal and all States except Queensland) in rail track when compared with either main highways or secondary roads. Some antiquated safeworking, and in 1999, too many train accidents, is also of concern.
- F. Australia now has the highest road freight per capital in the world (nearly 7000 tkm per person per annum). This gives an opportunity for rail to lift freight traffic, however, given a long standing trucking culture in Australia, this is a real challenge.

THE ROLE OF ROAD REFORM IN RAIL REFORM

There is growing recognition that moves to effect rail reform will achieve an unsatisfactory result, unless Government firmly addresses road reform. During the 1980s, a series of Government agencies found under recovery of road system costs from the heavier long distance truck operations. The highest aggregate estimate was due to the BTE (1988) that found all articulated truck operations failed to cover their fully allocated road costs when offset by all registration charges and all fuel taxes by some \$1283 million in 1985-86. Both the BTE (1998) and the ISC (1990) noted the option of mass - distance taxes.

The NRTC (1992) determined annual charges, comprising \$4000 for six axle articulated trucks and \$5500 for 8 axle B-Doubles, and, a notional road user charge of 18 cents per litre of diesel. In commenting on the NRTC charges, which abolished mass-differential charges then in place in NSW and Victoria and halved NSW annual fees, the Industry Commission (Annual Report, 1991-92, p197-198) noted in part that "*...the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs. . . . The charges, as recommended, will therefore potentially distort the long-haul freight market as rail reforms take effect.*"

Other external costs of road freight include road crash risk, road congestion, noise and air pollution. The ISC (1990) estimated the total 1989-90 cost in Australia for noise and air pollution as some \$1264 million, and, noted that whilst such estimates should be

treated with caution, "*... it is increasingly important that an attempt be made to include these costs in road cost allocation*".

In the late 1990s, the Federal excise rate for diesel was about 43 cents per litre including about 8 cents per litre collected for the States. This level of taxation had received ongoing objections from the road freight industry, and was reduced to 20 cents per litre as of 1 July 2000 as part of a New Tax System. This effectively put truck external cost charges to zero. As part of the New Tax System, rail was exempt from diesel fuel excise as of 1 July 2001. There is a good case for externality charges for road and rail, with the road charge appreciably more than the rail charge.

The issue of the cost of road crashes involving heavy trucks has demanded more attention, with the NSW Government holding in 2000 an inquiry into the Long Haul Trucking Industry and Terms of reference including: the extent of proper enforcement in the industry of driving hours, speeding and drug use, and whether a self-regulation or external regulation model is most appropriate for the road transport industry and what forms this should take. The NSW inquiry supplements an inquiry by a House of Representatives Committee (2000) into fatigue in all modes of transport. Most of the 41 recommendations in the inquiry report related to road transport, with some interest shown in a national operator accreditation scheme being developed for the road transport sector.

Although the incidence of trucks involved in road crashes has fallen, the BTE (2000a) has revised the cost of road crashes. Based on BTE data on the cost of road crashes, and NSW road crash data, an estimate of 0.5 cents per net tonne km road crash risk for road freight is now considered appropriate.

The issues of competitive neutrality were agreed to be addressed '*...without delay*' by the Australian Transport Council in 1997. Progress to date has been very slow.

SCOPE FOR CHANGE

Australia has many rail freight operators - with 17 in 1999 listed by the Productivity Commission (1999, p10). Their combined freight task at some 127 btkm in 1998-99 is less than Canadian Pacific's 1999 freight task of about 160 btkm. Thus, there is scope in a post privatisation phase for merger activities [which started in 2004].

The major constraints to rail assuming more of Australia's land freight task is considered to be the severe speed weight restrictions imposed by the track linking Australia's three largest cities, and, lack of competitive neutrality.

On the Sydney - Melbourne corridor, there is a need for major rail deviations to reduce the point to point distances, and provide easier grades and less curvature so as to allow for heavier and faster trains. There is also an urgent need to reduce growing rail congestion within Sydney by improving the separation of freight and passenger trains. The ARTC and NSW authorities completed a 'Project 11' study in 2000 with a view to reducing Sydney - Melbourne rail freight transit times from about 14 to 11 hours.

The potential for an inland route between Melbourne and Brisbane via Parkes has recognized since at least the mid 1980s (see for example, Laird et al, 1998), and gained increasing attention during 1999 with a \$300,000 Federal grant to an Australian Transport and Energy Corridor Company (ATEC). Such a route could use the existing secondary lines in NSW west of the Great Divide with minor upgrading, and major new works in South West Queensland. This would include a new tunnel under the Toowoomba Range with standard gauge capability, and overhead clearances high enough to allow for passage of double stacked container. An ATEC commissioned pre-feasibility study conducted in 2000 with the support of the Commonwealth and three State Governments suggested that an inland Melbourne - Brisbane route showed some promise (BTE, 2000b).

A standard gauge could be later extended through an inland route towards Gladstone and its deep water port, and possibly onto Darwin. A Queensland rail connection to Darwin has long been advocated, with more recent proposals by Endersbee (1994) and ATEC.

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REFERENCES

Apelbaum Consulting Group Pty Ltd (1997) The Australian Transport Task, Primary Energy Consumed; and Greenhouse Gas Emissions' DPIE, Canberra.

Australian Bureau of Statistics (2000) Survey of Motor Vehicle Usage for 1998-99

Bureau of Industry Economics (1995) Rail Freight 1995 International Benchmarking.

Bureau of Transport (and Communications) Economics, Canberra: AGPS - (1998) Review of road cost recovery

- (1996) Transport and Greenhouse: Costs and options for reducing emissions.
- (1999a) Public Road – related expenditure and revenue in Australia
- (1999b) Competitive neutrality between road and rail
- (2000a) Road crash costs in Australia
- (2000b) Brisbane - Melbourne rail link: Economic analysis

Endersbee L (1994) The Asian express, a proposed fast freight service to Asia, Australian Academy of Technological Sciences and Engineering.

Ernst & Young (1998) Benchmarking review of operating costs for National Rail (edited)

House of Representatives Standing Committee on Communications, Transport and Micro economic Reform Canberra

- (1997) Planning not Patching
- (1998) Tracking Australia
- (2000) Beyond the midnight oil

Industry Commission (1991) Rail Transport: Final Report Canberra

Inter-State Commission, Canberra: (1990) Road Use Charges and Vehicle Registration : A National Scheme

Laird, P G - (1994) Rail and Urban Public Transport: Commonwealth Funding and Policy Issues. Upgrading Options, Background Paper, Parliamentary Research Service, Canberra

- (1998) Rail freight efficiency and competitiveness in Australia, Transport Reviews, Taylor and Francis, London, Vol 18, pp 241-256
- (1999) Interstate rail and road investment and access pricing, Papers of the Australasian Transport Research Forum, Perth, V.23, p 27 42

Laird, P G Michell, M and Adorni-Braccesi, G (1998) Melbourne - Brisbane rail upgrading options: Inland or Coastal, pp243-258 Papers of the Australasian Transport Research Forum 22, Sydney

Nash, C A (1985) Rail policy and performance in Australia, Transport Reviews, Vol 5, pp289-300

National Road Transport Commission (1992) Heavy Vehicle Charges: Determination

National Transport Planning Taskforce Canberra:

- (1994) Building for the job, main report
- (1995) Commissioned Work Vol 1:BTCE Report

Productivity Commission (1999) Final Report on Progress in Rail Reform

Rail Projects Taskforce (1999), Revitalising Rail: The Private Sector Solution, Department of Transport and Regional Services, Canberra

Senate Select Committee on National Competition Policy (2000) Riding the winds of change.

Steering Committee on National Performance Monitoring (various years) Government Trading Enterprises Performance Indicators 1989-90 to 1996-97.

Vanselow R G (1989) Productivity Improvements in Heavy Haul Railway Operations – The Hamersley Experience, Fourth International Heavy Haul Railway Conference, Brisbane