

*Supplementary submission to the House of Representatives
Standing Committee on Transport and Regional Services Inquiry into the Integration of
regional rail and road freight transport and their interface with ports*

P.G. Laird, Faculty of Informatics, University of Wollongong, January 2006

1. INTRODUCTION

This supplementary submission shall include information from a recent paper '*Australian commodity exports and land transport*' prepared by this writer for the WESTAC Freight forecasting forum 7-8 December 2005 Vancouver Canada.

Brief comment is also given on Tasmania and New Zealand.

2. COMMODITY EXPORTS

An abstract, and then some excerpts, follow from the above paper.

2.1 Abstract

Australia, like Canada, is seeing record exports of commodities, and strong growth in the numbers of import containers. The two main export commodities have for three decades been coal and iron ore. In the four years from 1999 - 00 to 2003 - 04, coal exports have increased from 175 million tonnes (mt) to 218 mt and are projected to grow to 287 mt by 2009-10. Iron ore has seen even stronger growth from 150mt in 1999 - 00 to 195 mt in 2003 - 04. Iron ore export tonnages are expected to exceed coal export tonnages in late 2005, and are projected to reach 330 mt in 2009-10. Wheat exports in recent years have varied from 9 to 18 mt per annum.

The transportation of iron ore and most coal to ports by rail takes place at world best practice. With coal exports, a number of pressure points have developed due to various planning and funding constraints. These are being addressed for the larger coal fields [note added - albeit somewhat set back by a recent decision of the Queensland Competition Authority in respect of Queensland Rail]. However, as an unintended consequence of rail privatisation, wheat exports are now constrained by poor rail infrastructure. Further issues are ongoing hidden subsidies to heavy road freight operations and the growing need to improve energy efficiency in land freight.

Faced with a projected doubling of domestic land freight tonnage over two decades to 2020, the Australian government has put in place a new integrated transport programme called AusLink. The aim is to improve interstate both rail and road links.

2.2 Recent commodity exports and projections

Coal and iron ore exports from Australia are setting new records each year and exceeding expectations of the 1990s. As noted by an Exports and Infrastructure Taskforce (2005) "The outlook for Australian commodity exports in the medium term remains strong. Iron ore is expected to overtake coal this year as Australia's largest commodity export, in volume terms, growing at 9 per cent a year to reach 330 million tonnes in 2009-10, supported by strong growth in steel demand in China and other Asian markets. Coal exports are also forecast to grow by 5 per cent a year to reach 287 million tonnes in 2009-10, driven by growth in coal fired power generation and blast furnace steel production in the region. Australian exports of wheat, crude oil and alumina are also forecast to rise strongly, although they are considerably lower in volume terms."

Table 1 Export outlook for key commodities - million tonnes

	2003 -04	2004 -05	2005 -06	2006 -07	2007 -08	2008 -09	2009 -10	Annual growth
Coal	218.4	229.9	244.4	259.8	270.6	282.0	287.0	4.7
Iron ore and pellets	194.8	231.4	255.3	281.9	305.9	318.8	330.9	9.2
Wheat	15.1	17.7	16.2	16.5	17.7	18.3	19.6	4.5
Crude oil	15.0	14.7	20.1	23.2	23.1	21.4	20.5	5.3
Alumina	13.6	14.0	14.8	15.5	16.9	18.5	19.5	6.2
Woodchips	10.6	9.0	10.8	11.0	11.2	11.4	11.6	1.5
Salt	10.3	10.6	10.8	11.0	12.2	13.7	14.0	5.2
Liquefied natural gas	7.9	10.8	12.4	13.5	15.2	19.2	21.3	18.0
Barley	5.3	5.7	4.2	4.3	4.4	4.5	4.6	-2.5
Sugar	3.9	4.0	4.1	4.1	4.1	4.2	4.2	1.2

Reference: Exports and Infrastructure Taskforce (2005) Table 1 page 12

2.3 The growing land freight task

The Australian road freight industry has sectors that operate at world best practice. For many years, truck operators have taken advantage of relaxation of mass limits, and increased expenditure on roads by all levels of Government, which by 2005-06 was estimated at \$10.4 billion by the National Transport Commission (NTC - 2005). Road pricing for heavy trucks is an ongoing issue, which we consider later.

The Australian rail freight industry has undergone considerable change over the last decade with a series of Government rail system sales and track leases commencing in 1997.

Rail freight may be regarded as having two major components – bulk and non-bulk. In 2003-04, the Australian bulk rail freight task consisted mainly of two elements: the movement each year of iron ore from mines in the Pilbara Region of WA; and the haulage of coal. This coal is mainly export coal moved from mines to ports in Central Queensland and the Hunter Valley of NSW. Apart from coal and iron ore, the other major bulk rail freight task is the

movement of grain in all mainland States. This is seasonal traffic and can vary considerably from year to year, reaching 20 million tonnes in a good drought free year. As we shall see, the efficiency of these bulk rail freight tasks range from world's best practice to 'text book' examples of difficult operations with poor performance.

Reflecting the Australian Federal structure and other factors including 19th Century inter Colonial rivalry, Australia has no fewer than three railway gauges in common use. These are a standard gauge of 4' 8.5" (1435 mm) in use in all mainland States and territories, an Irish broad gauge of 5' 3" (1600 mm) in use in Victoria and South Australia and a narrow 3' 6" gauge (1067 mm) in use in Qld, SA, WA and Tasmania. The respective lengths in route kilometres are 16,303 km standard, 4028 km broad and 15,063 km narrow plus 296 km of dual (standard/narrow) gauge track.

The growing rail and road freight tasks in Australia are shown in Table 2.

	Billion tonne kilometres (<i>million tonnes</i>)				
	1994-95	1998-99	2002-03	2003-04	2003-04
<i>Rail</i>					
'Govt.' rail *	62	67	41±		
Non-Govt. **	48	60±	117		
Total	110	127 ±	158	168	<i>(594)</i>
Coal	28	33±	44	46	<i>(239)</i>
Iron Ore	47	50±	66	72	<i>(220)</i>
Other Intrastate	18	24±	21	23	<i>(119)</i>
Interstate	17	20±	26	27	<i>(16)</i>
<i>Road</i>					
B-Doubles	9	19	35		
Road trains	15	20	19		
Artic. trucks	89	99	116		
Interstate	26	30 ±	37 ±		
Total	119	127	153		

* Includes former State and Federal Government operated systems in 1994-95, Queensland Rail (QR) only in 2002/03

** Excludes Government operated systems, all except QR in 2002/03

Note coal and iron ore includes relatively small domestic movements

References include: For rail, Steering Committee on National Performance Monitoring (1996), Bureau of Transport and Regional Economics (BTRE - 1999), various Annual Reports, Australasian Railway Association (ARA, 2004a, 2005a) and some estimates (indicated by ±). For road. ABS (2004) Note various data caveats as there are severe limitations on the quality and quantity of data publicly available on land freight in Australia.

2.4 No national infrastructure crisis ?

On 18 March 2005, in response to increasing concerns about delays to exports plus State based regulatory constraints on planning and investment, the Prime Minister announced the formation of a taskforce to identify any bottlenecks, of a physical or regulatory kind, in the operation of Australia's infrastructure that may impede the full realisation of Australia's export opportunities. The taskforce's report was released in June. The response from a COAG meeting on 15 June 2005 to the recommendations in relation to infrastructure included a note that there was "*no national infrastructure crisis*".

This follows increasing expressions of concern about transport and other infrastructure including those of Engineers Australia (2001, 2005) finding considerable under investment. This includes a damning F rating for the mainline interstate track linking Australia's three largest cities of Melbourne, Sydney and Brisbane. This will be partly addressed by an ARTC and AusLink programme with a five year \$2 billion investment in rail. Other expressions of concern about the state of the nation's infrastructure and lack of investment (which since 1970 has fallen from about 7% of GDP to 3.6% of GDP) include Kilsby et al (Kilsby D Laird P and Bowers D (2004) *Australian Transport Infrastructure: Fit For Purpose?* Australasian Transport Research Forum, Adelaide), the Business Council of Australia (2005), the Committee for Economic Development of Australia (2005), and, the Reserve Bank of Australia (2005).

In addition, the 2004 OECD report on Australia noted, inter alia, "*Recently announced national land transport reforms planned under the AusLink framework need to be effectively implemented, to ensure efficient long-term investment and better integration of the network.... More broadly, Australian governments should seek to establish an integrated reform agenda within a co-operative assessable framework covering all elements of land transport and shipping transport.*"

2.5 Pricing

The pricing of rail freight services for the haulage of coal has previously attracted industry and other criticism for being too high, leading the Industry Commission (1991) to comment on overcharging which was then estimated at about \$400m per annum. This was for the most part addressed by National Competition Policy. A further concession was the removal in the year 2000 of a diesel excise of approximately 40 cents per litre applied to all rail operations except the haulage of iron ore. The total amount collected over the 18 years this excise was levied on rail operations was about \$2 billion in 2000 terms (Laird et al, 2001) with appreciably less than this applied to rail capital works.

It is now open to question as to whether rail track owners are charging enough to cover the long term costs of rail infrastructure upgrades and maintenance costs (with such reservations expressed by the ACCC (2002) and BTRE (2003) in regards to the interstate mainlines). In addition, as noted above, the grain lines are in most states are in need of rehabilitation.

Rail freight operations generate external costs (accidents, air pollution, noise and greenhouse gases (\$A25 per tonne)), with estimates of unit costs of 0.17 cents per net tonne km (ntkm) plus an additional 0.26 cents per ntkm for haulage in urban areas (Laird 2005). With a non iron -ore rail task of 96 btkm in 2003-04 (Table 2) and assuming say 10 btkm of this freight task is in urban areas, an external cost of about \$190m results. In the absence of any diesel fuel excise being levied on rail, these external costs are not being recovered.

The issue of road pricing for heavy trucks in Australia has long been contentious with inquiries going back to the 1970s and a BTRE (1988) study found during 1985-86, articulated truck operations had a resultant under-recovery of road system costs of \$1283 million. Using different methodology to the BTRE, a hidden subsidy was calculated (Laird et al, 2001) of \$1235m in 1997-98. The BTRE (1999, page xi) noted *"Under the current road user charging system, trucks overall are undercharged for their use of the road system. Moreover, larger more heavily laden vehicles and those travelling larger distances are charged the least (per tonne kilometre) while smaller, less heavily laden vehicles and those travelling shorter distances cross-subsidise them."* The BTRE (loc.cit, p 58) suggested that *"Mass-distance based road use charges offer greater scope to reflect the avoidable cost of heavy vehicle road use."*

With rail privatisation, the issue has received increasing attention. The ARA's (2004b) infrastructure policy, inter alia, called on Government to *"review infrastructure funding and access pricing methodologies to remove inequities between road and rail..."* and the ARA (2005b) revisited the issue. The Australian Trucking Association (2004, p 14) maintains that *"The industry more than pays for its attributed share of road costs"* whilst the Australian Financial Review (2004) notes, inter alia, that full cost recovery from trucks *"... would probably require the commonwealth and state governments to brave a deafening blockade of their respective parliament houses."*

Under COAG agreements, road pricing of heavy vehicles is a responsibility of a National Transport Commission (NTC, 2005). In 2003, the NTC moved to a Third Determination of such charges. However, the NTC in its third determination used neither mass differentiation or distance differentiation in its annual charges for heavy articulated trucks. Moreover, the third determination of charges excluded any external costs.

Assuming unit external costs (with the four items noted above for rail and BTRE (2005) for health costs of air pollution) of 0.98 cents per net tonne km in non-urban areas and 1.65 cents per ntkm for haulage in urban areas (Laird, 2005) with an articulated truck freight task of 116 btkm (Table 2) and 25 btkm in urban areas (from ABS (2004) data), the social and environmental costs for 2002-03 were about \$1330m. Under present rebates for diesel use, this amount is not being recovered.

3. TASMANIA

In February 2005, this writer had the opportunity to inspect at first hand most of the Tasmanian rail network. In summary, the inspection revealed a permanent 60 km/h speed restriction over the entire network plus numerous speed restrictions around tight radius curves

and older bridges. On each line (with the possible exception of the relatively new line to Bell Bay) there was no shortage of Temporary Speed Restrictions reflecting a variety of problems. The axle load limit is 18 tonnes as against 25 tonnes on mainline track in mainland Australia or 30 tonnes in the coal lines of the Hunter Valley of NSW.

Since the Federal Government sold Tasrail in 1997, any Federal and State assistance to the Tasmanian mainline track has been insignificant compared to that to restore the Queenstown to Strahan railway as a tourist venture. As a result of little financial assistance since the sale of Tasrail, and low road pricing for heavy trucks ensuring that insufficient funds are generated from rail freight for track maintenance and enhancement, and other factors, the condition of the track is poor.

Even in New Zealand, where mass - distance charging for heavy trucks gives a rail operator half a chance of providing a competitively based service, the New Zealand Government was obliged to take back the track after ten years of rail privatisation. This led to the formation of the New Zealand Rail Corporation in 2004 (Ontrack) which may be an appropriate model for Tasmania. More information follows.

If a container is to be moved by land from Burnie to Hobart, it can either be moved by articulated truck or rail. If it is moved by truck, it goes over a road that since 1974 has been fully funded by the Federal Government as Tasmania's part of the National Highway System. Since then, in today's dollars (older amounts adjusted for inflation giving an estimate of total NHS investment in the 30 years from 1974 to 2004 of \$25.6 billion in 2004 values and Tasmania's share of NHS funds running at least 3 per cent per annum), the Federal Government has outlaid roughly \$750 million on this road.

For a container weighing some 20 tonnes being moved by an articulated truck from Burnie to Hobart, a distance of about 320 km, the road freight task is 6400 net tkm. Using the previously supplied estimates to the Committee of unit external costs in 2000 terms and assuming haulage of 25 km in urban areas, the indicative hidden subsidy is about \$130. That is, about \$6-50 per tonne.

If the same container moved by rail from Burnie to Hobart, it has to move over track which apart from the odd Government handout is supposed to be maintained by rail freight revenue. The rail freight external costs for moving this container, even with road pick up and delivery, would be much less than the \$130 above.

Clearly something needs to be done. Here, it would help if Pacific National were to be more transparent as to the tonnages they actually move over their network, and the tonnages they could move over better track. Provision of such basic data, plus data on tonne kilometres, should be a condition for gaining some government help in track upgrades.

4. THE NEW ZEALAND MODEL

Info from the website of the New Zealand Rail Corporation in 2004 (Ontrack) at <http://www.ontrack.govt.nz> follows.

ONTRACK took responsibility on behalf of the Crown for the ownership and maintenance of the railway infrastructure following the Crown's repurchase of the network from Toll Holdings in September 2004.

The organisation takes over the mantle of custodian of an asset that has played a pivotal role in the country's history and early growth.

When the Government repurchased the network, it recognised there had been significant underinvestment in infrastructure during its years in private sector ownership.

As part of the agreement with Toll, it agreed to invest \$200 million to upgrade the infrastructure. For its part, Toll agreed to spend \$100 million on upgrading rolling stock.

Growing pressure on the roading network and a greater appreciation of the advantages rail has over roading for the haulage of bulk freight and passengers, has rejuvenated interest in rail.

The result is likely to be an increase on the volumes of traffic carried and an expansion of the track network.

Our vision:

To make rail a sustainable element of New Zealand's transport network.

ONTRACK will:

- Undertake its functions in a way that contributes to the aim of achieving an integrated, safe, responsive transport system.
- Provide an efficient, effective and affordable rail network.
- Meet or exceed availability and reliability targets agreed with customers
- Take a long-term perspective on any decisions to replace, renew, maintain or dispose of rail assets
- Invest to appropriately extend the reach, capacity and utilisation of the rail network
- Provide affordable inter-modal access to rail
- Be a good employer and invest to develop a sustainable organisation
- Support development of the rail industry
- Recognise our Treaty obligations

By taking this approach ONTRACK's objectives are to:

- Manage the rail network in a manner consistent with our statutory obligation
- Prepare and maintain industry codes and standards to the extent that is reasonable and necessary in terms of carrying out our statutory function
- Encourage consumers, exporters and public bodies to make long-term investments to use rail based on their confidence in our management of the network
- Encourage our direct rail freight customers to invest in rolling stock, terminals, inter-modal facilities, and support infrastructure
- Encourage our direct passenger rail customers, and the public bodies that

fund transport, to invest in rail solutions to reduce congestion and/or enhance transport service quality safety and efficiency

- Demonstrate to shareholders by our management of the network, that the organisation will be financially sustainable over the long term.

It is submitted that the recently introduced New Zealand model for government ownership of the rail track has much to commend it, and should be considered for at least Tasmania, Victoria and South Australia.