

# **SUPPLEMENTARY SUBMISSION NO.177**

*Third 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*

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## **1. Introduction**

Additional comment to my earlier submissions (numbers 116, 133, and 139) now follows. The topics are some general comments on interstate rail freight, the AusLink planning process in regards to the Brisbane-Cairns corridor, and further comments on road pricing for heavy trucks.

## **2. Interstate rail freight**

These general comments are to supplement earlier submissions that argued for a further round of track upgrades to follow the present ARTC investment programme that is due to be completed in 2009. This includes grade easing and track straightening.

In July 1995, when freight forwarder SCT started their Melbourne – Perth rail freight service as an early application of National Competition Policy, a weekly 600 metre train with 22 louvre vans was placed into service. Today, SCT run four and sometimes five trains per week with each train having up to 70 wagons. This growth factor is at least twelve. Other data shows that the rail freight task on the East - West corridor has had very strong growth from 1994-95 to 2003-04. This strong growth would not have been possible without three major Federal initiatives. These are the Kalgoorlie Perth gauge standardisation with its new route in the Avon Valley during the 1960s, Australian National's concrete resleepering in South Australia (1978-95) and the Keating Government's Melbourne Adelaide Rail Standardisation project (1992-95).

However, on the North South corridor, linking Australia's three largest cities, there has been little or no growth in the rail freight task. This reflects the substandard track with minimal investment to date coupled with rebuilding the Hume and Pacific Highways (at a cost of about \$10 billion). The worst performing part of this corridor is Sydney Melbourne where rail only wins about 11 per cent of market share of 11 million tonnes per annum of general freight.

Some people argue the low share of 11 per cent reflects a corridor of relatively short length (900±km). Yet Melbourne - Adelaide (840km), is a shorter length corridor where rail wins a higher share (21 per cent). Auckland - Wellington is shorter still (640km) with an even higher modal share reflecting a poor intercity road and New Zealand's mass -

distance pricing for heavy trucks. Terminals and rail congestion along with road freight competition are further factors.

### **3. The AusLink Brisbane - Cairns corridor strategy**

To quote from the draft Corridor Strategy released by the Department of Transport and Regional Services on the AusLink website in mid June 2006 (<http://www.auslink.gov.au>) *"A key component of the AusLink process is the development of a strategy for each corridor of the AusLink National Network. A Corridor Strategy is a statement of the shared objectives and strategic priorities of the Australian and State/Territory Governments for the long-term (20-25 year) development of the AusLink Network. Corridor strategies provide guidance to decision-makers and project proponents formulating network initiatives, and most importantly, inform development of the next and subsequent National Land Transport Plans."*

The Brisbane-Cairns Corridor Strategy is of particular interest as it is the first such strategy released. It is also of interest as this longer corridor has some special features, as outlined in Appendix A. These include the Caboolture - Nambour track being the most congested section of single rail track in Australia, and, the rail bridge over the Burnett River at Bundaberg being currently subject to a speed restriction of 15 km/h with no braking or acceleration whilst any part of the train is on the bridge.

The Committee may question the approach taken in the draft Brisbane-Cairns Corridor Strategy that appears to follow a 'Business as usual' approach which favours Bruce Highway improvements at the expense of major upgrades of the Queensland North Coast Line (NCL). Some concerns include:

#### **3.1 Oil supplies**

There is a need to ensure that plans for future infrastructure can be modified if it is confirmed that high oil prices will be sustained (or continue to increase) as opposed to the scenarios raised from time to time (for example at the BTRE Colloquium held in June 2006) that within two years, oil prices will have fallen below \$US40 per barrel. However, oil pricing does not rate a mention in the study (even in Chapter 3 re foreseeable changes to 2030). It is recommended that future AusLink corridor studies consider:

Planning within a modified business as usual context (ie AusLink as per the White Paper).

Planning within the scenario of having to deal with sustained high oil prices.

As noted in the Brisbane- Cairns corridor strategy, the total inter-regional freight task on the average corridor segment was forecast to increase from 5.5 Mt in 2003 to 7.7 Mt in 2013, also, in considering future rail freight demand three scenarios are examined:

- Base case – rail captures 95% of its current mode share
- Market defence – rail captures its current mode share
- Rail growth – rail captures 105% of its current mode share.

By 2013, the additional use of diesel between the base case and the rail growth case (some 0.77 mt on rail), is likely to be at least 17 million litres per year. This assumes a Brisbane- Cairns road distance of 1640 km and a rail distance of 1699 km, a rail energy intensity of 0.31 MJ -FFC per tonne km<sup>1</sup> with 41.77 MJ per litre of diesel and road's energy intensity being three times that of rail. Further rail deviations and the use of electric traction in place of diesel electric locomotives for rail between Brisbane and Rockhampton would give additional diesel savings.

### 3.2 The need for improved advanced planning

Planning is given some mention in the Corridor Study, for example on page 7 (list of Short-term Priorities (to 2015) to determine, where supported by the community, future needs and route preservation requirements for road and rail town bypasses.

It is suggested that future Corridor Studies should give much more attention to route preservation. The Queensland Transport Minister, The Hon Paul Lucas MP<sup>2</sup> has noted the need to “*reserve rail corridor land before it becomes a costly issue*”.

### 3.3 Rail deviations

Along with duplication and deviations of the Caboolture - Landsborough - Nambour section, other desirable Queensland North Coast line rail deviations include:

- A. Selected rail deviations between Nambour and Bundaberg.
- B. Selected (but fewer in total length) rail deviations between Bundaberg and Cairns.
- C. A western bypass to go with a new bridge over the Burnett River at Bundaberg. As noted above, the existing bridge is subject to a speed restriction of 15 km/h with no braking or acceleration. The speed restriction used to be 25 km/h. In addition, in North Bundaberg, the trains have to go down the middle of a road at a slow speed. Obviously, a new rail bridge on a new alignment is needed.

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<sup>1</sup> ARA Australian Rail the 2004 Productivity Report

<sup>2</sup> as quoted, Track and Signal, Oct-Nov-Dec 2005, page 77

D. A rail freight bypass to the west of Rockhampton Station where north of this station, trains move along the centre of Denison St at 25 km/h. A new rail bridge (over the Fitzroy River) on a new alignment would assist here.

Some straightening and strengthening of the Brisbane – Townsville track was done during the late 1980s (as part of Main Line Electrification) and during the 1990s with Main Line Upgrade or MLU. However, as noted above and in the Corridor Study "*the horizontal alignments and vertical grades between Nambour and Bundaberg remain poor and are a major impediment to attaining any further improvement in transit times and train length.*"

Selected rail deviations<sup>3</sup> can give appreciable benefits and include:

1. Reduced point to point distance,
2. Faster and heavier freight trains,
3. Improved reliability of freight train operations,
4. Improved rail passenger services,
5. Appreciable savings in fuel,
6. Reduced train and track maintenance costs,
7. The potential for elimination of level crossings, plus flood mitigation, and improved clearances,
8. Reduced road accidents involving heavy trucks due to rail's expected increase in modal share,
9. Reduced diesel use and greenhouse gas emissions due to rail's superior energy efficiency in line haul freight (a factor of about three to one), and,
10. The ability of an upgraded rail system to defer considerable expenditure on the augmentation of road capacity.

In 1998, Queensland Rail produced a Straight Line Diagram identifying 237 deviation sites between Brisbane and Cairns. Of these, 174 deviation sites were between Landsborough and Townsville. The number of deviations where the indicated speed restrictions are less than 100 km/h for freight trains between Landsborough and Townsville to 135. This would require reconstruction of some 290 km of track, and give for a heavy freight train time savings estimated at about 137 minutes, and fuel and other cost savings for train operators of about \$2600 per trip<sup>4</sup>. This is about 20 per cent of the total operating cost of the train if it could sustain 100 km/h through running for the entire haul. In

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<sup>3</sup> 2006 Laird P *The Sydney - Melbourne Rail Corridor - options for the 21 st Century* Australian Rail Summit, July, Sydney

<sup>4</sup> See *The Smooth Running Study* as one of the three Rail Studies released in 2003 by the Queensland Minister for Transport

addition, saving in track maintenance costs of about \$200 would result for each standard freight train trip between Landsborough and Townsville. In addition, for each tonne of line haul freight a more competitive rail operator could attract, external transport costs would be reduced.

### 3.4 External costs

External costs form an important part of AusLink project assessment in the *National Guidelines for Transport System Management In Australia* released in 2004 by the Australian Transport Council. External costs were also addressed in the ARTC Track Audit<sup>5</sup> which gave unit estimates '*... noise pollution, air pollution, greenhouse gas emissions, congestion costs, accident costs, and incremental road damage costs for road and rail freight in both urban and non-urban areas.* These unit estimates were recently revised<sup>6</sup> as 2000 costs of 2.75 cents per ntkm for road haulage in urban areas, 1.98 for road haulage in non - urban areas, 0.43 for rail haulage in urban areas, and 0.17 for rail haulage in non - urban areas. These costs, adjusted to 2005 values (at 3 per cent pa) are approximately 3.2 cents per ntkm for road haulage in urban areas, 2.3 for road haulage in non - urban areas, 0.5 for rail haulage in urban areas, and 0.2 for rail haulage in non - urban areas.

The current Auslink report notes a Brisbane- Cairns road distance of 1640 km and a rail distance of 1699 km. Assuming urban hauls of 40 km for each line haul mode, the external cost for each tonne of road hauled intercity freight is about \$38.10 as against \$3.50 per tonne for rail line haul. If a total of 40 km is assumed for urban road pick up and delivery for each rail line haul the estimated external cost is an extra \$1.30 per tonne. This suggests that, for intercity freight moving between Brisbane and Cairns by line haul rail and road pick up and delivery diverted to road line haul, with road pick up and delivery, there is a net increase of external costs of about \$33.30 per tonne in 2005. In 2013 terms, compounded at 3 % pa, this is about \$42 per tonne.

As noted above, the draft corridor strategy, in considering future rail freight demand had scenarios varying by as much as 0.77m tonnes by 2013. The difference in external costs is then some \$32 million per year.

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<sup>5</sup> Australian Rail Track Corporation (2001) Booz.Allen and Hamilton Appendices *Interstate Rail Network Audit*,

<sup>6</sup> Laird (2005) *Revised Land Freight External Costs In Australia*, Australasian Transport Research Forum (ATRF) at patrec.org

**Table 1 Fatalities from road crashes on the Bruce Highway, Queensland National Highway System roads, and all Queensland roads**

Year	Involving articulated trucks			Involving all vehicles		
	Bruce	All NHS	Total	Bruce	All NHS	Total
2000	16	29	40	51	83	317
2001	13	18	33	50	74	324
2002	10	18	28	45	64	322
2003	7	11	35	36	49	310
TOTAL	46	76	136	182	270	1273
<i>per cent</i>	<i>25.3</i>	<i>28.1</i>	<i>10.7</i>			

Reference: Road crash data supplied by the Queensland Department of Main Roads. All NHS denotes all National Highway System roads within Queensland and Total denotes all Queensland roads.

One important external cost of road freight is road accidents involving articulated trucks on the Bruce Highway. Some road crash data for the Bruce Highway and sections of the National Highway System within Queensland is summarised in Table 1. It can be seen from the data in Table 1 that for the four years to 2003, the numbers of fatalities in road crashes involving articulated trucks on the Bruce Highway was one third of the numbers of such fatalities on all Queensland roads. This data for the four years to 2003 shows that about 25 per cent of lives lost in road crashes on the Bruce Highway involved articulated trucks.

External costs are conspicuous by their absence in the draft Brisbane-Cairns Corridor Strategy report. The Committee may care to recommend that future corridor strategies do address external costs.

#### **4. Heavy truck road pricing**

There is an increasing interest in mass - distance pricing, which has been in successful use in New Zealand since 1978. The interest in Australia includes a brief reference to such pricing in the 2004 AusLink White Paper (page 11), and a current inquiry of the Productivity Commission into road and rail freight infrastructure pricing.

By use of methodology developed by a 1980 Commission of Enquiry into the New South Wales Road Freight Industry, and 2005-06 data released by the National Transport Commission (NTC) during its third determination of charges for heavy vehicles, road

system costs attributable to the operation of articulated trucks in Australia is estimated<sup>7</sup> at \$2436m. This is much larger than the NTC estimate of road system costs due to articulated trucks of \$1039m for 2005-06. With an estimated \$920m in 2005-06 from annual registration fees and a road user charge, the resultant under-recovery is about \$1.5 billion. The actual under-recovery is likely to be between the NTC's recommendations and the above findings. Both this methodology and the NTC find appreciable subsidies to B-Double operations.

As per earlier submissions, governments in the past (and in March 2006 in rejecting a benign third determination of heavy vehicle charges) have found considerable difficulty in addressing road pricing. In the meantime, it would appear prudent for government to provide extra funds to maintain branch lines and improve mainlines.

The social and environmental costs of articulated truck operations for 2003-04 are estimated at about \$1525m. Such costs are not recovered at present. The corresponding costs for rail excluding the haulage of iron ore is estimated at about \$215 million.

#### **Appendix A Special Brisbane - Cairns corridor attributes**

A. No funds (at least initially) were made available under AusLink in the first period (2004-2009) for a further upgrade of the North Coast railway as part of a formal agreement between the Australian and the Queensland Governments.

This is despite AusLink objective to take an integrated transport approach on corridors. For example as stated by the Deputy Prime Minister Mr Anderson MP on 7 June 2004 that the Australian Government “*will fund projects on the transport corridors that have the greatest importance for Australia’s long term future, whether the projects involve road, rail ...*” also, that AusLink provides funds for the New South Wales North Coast line which only has half the traffic of the Queensland North Coast line.

B. The Caboolture - Nambour track is now probably the most congested section of single rail track in Australia. It was recognised as congested as long ago as 1994 in the BTCE report of the National Transport Planning Taskforce. This is shown by freight train curfews in peak hours, expanding the Brisbane Rockhampton electric tilt train transit time

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<sup>7</sup> Submission No 23 by this writer to the Productivity Commission Inquiry into road and rail freight infrastructure pricing at <http://www.pc.gov.au/inquiry/freight/subs/sublist.html>

from 7 hrs to 7 hr 15 min in 2003, and, before then the introduction of the Caboolture - Nambour 'railway' bus.

However, identifying and protection of a new rail corridor for duplication on improved alignment has proved difficult and time consuming.

After much consultation and planning, an Option 2 route for a Caboolture – Landsborough duplication with deviations was on public exhibition to December 2003. On 15 January 2004 the Queensland Government decided not to proceed with Option 2. The attendant delays and ongoing rail congestion impedes efficient rail freight and passenger train operations. These delays include restrictions on freight train movements during peak hours and the use of a 'railway bus' between Caboolture and Nambour whose use for some scheduled services leads to a 2 hr 30 min train journey between Brisbane and Nambour (enough to discourage anyone from using public transport again).

There is a need to expedite Caboolture – Landsborough duplication on an improved alignment, and, to expedite planning and corridor protection for Landsborough - Nambour duplication and desirable rail deviations north of Nambour.

C. The Corridor study recognizes (page 19) re the southern section an aim "to maintain freight capacity over the next ten years as commuter rail services increase. Projects include the duplication and realignment of the NCL from Caboolture to Beerburrum, followed by Beerburrum to Landsborough and then Landsborough to Nambour. However, it is of note (for example, as touched on in the 2004 Queensland Infrastructure Report Card of Engineers Australia), that this upgrade has been subject to considerable planning delays.

D. As recognized in the Corridor Study (page 17), some rail deviations have been constructed as part of NCL upgrades. In fact, this rail corridor stands out as an example of the notable achievement of dramatically improved performance resulting from track straightening undertaken during the late 1980s and the early 1990s. However, as noted (page 17 again) "*... the horizontal alignments and vertical grades between Nambour and Bundaberg remain poor and are a major impediment to attaining any further improvement in transit times and train length.*" The location of potential future deviations and town rail bypasses need more consideration.



D. A significant part of the Brisbane - Cairns railway is electrified (between Brisbane and Rockhampton), and, tilt train passenger services are offered. Indeed, this is the only rail corridor in Australia or indeed the Southern Hemisphere in which tilt train services are provided. However this is not recognized in the draft Corridor Study.

E. As noted on page 5 and page 9 of the □Corridor Study, Queensland does have a Rail Network Strategy. Many other States do not.

F. Queensland has some good examples of shared rail and road corridors. Examples on the Bruce Highway and Brisbane - Cairns railway includes a causeway built during the 1980s between Rocklands to Rockhampton.

G. A not so good example of a shared rail and road corridor is trains that must travel down the middle of a road at a slow speed in North Bundaberg and north of the Rockhampton Station. (It takes one back fifty years).

H. Vehicle use on the Bruce Highway continues to be subsidized by the Queensland Fuel Subsidy Scheme, amounting to 8.1 cents per litre for fuel excise. The study on page 10 notes Bruce Highway Annual Average Daily Traffic of between 2,500 - 100,000 AADT, concentrated around urban centres. Assuming an average of say 10,000 vehicles per day by 2025 (Fig 4, p22) for its length of 1640 km and assuming each vehicle uses an average of 11 litres per 100km, an annual fuel use of about 660 million litres would result. The resulting subsidy to vehicle use on the Bruce Highway is then \$53 million per year.

I. The Brisbane - Cairns rail corridor is the only one of its length in Australia supporting the movement of livestock by rail.

J. The use of narrow gauge track on the corridor (imposing some costs of moving rail freight between Queensland and other states).