20 September 1998

Progress in Rail reform
Productivity Commission
LB2 Collins St East
MELBOURNE VIC 8003

Dear Commissioners

We have been invited to put a submission to the Inquiry into Progress in Rail Reform but members of our committee to do at present have the time to prepare a new submission.

Accordingly, I present a slightly amended version of the submission we made to the Inquiry into the Role of Rail in the National Transport Network, in October 1997.

We are concerned at projections at the increase of energy and transport greenhouse emissions as a proportion of total emissions. This suggests, not merely an increase in trade, but a lack of will to seek efficiencies in the use of transport fuel.

> *Emissions from the Energy Sector (which includes transport but excludes Fugitive Fuel Emissions) accounted for more than half of total emissions in 1990, and are expected to grow by 40% (106 Mt CO_2-e) from 1990 to 2010 as well as providing an increased share of total emissions. This projection reflects assumptions of continuing growth in GDP, in the resources sector, and in transport.*

Australia's Second National Report under the United Nations Framework Convention on Climate Change (Summary), November 1997

We consider that it is imperative that Australia have an energy efficient transport system, not only because of the need to meet greenhouse emissions targets, but for economic reasons. Australia is wasting money importing oil for inefficient transport systems and this will only get worse in the near future when the current glut of oil gives way to world wide shortages.

For this and other reasons it is vital to have an effective rail system.

While we are not particularly concerned about who runs the trains, we believe a measure of government control is needed to ensure that the public interest is paramount in our transport system.

Yours sincerely

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SUBMISSION TO INQUIRY INTO THE ROLE OF RAIL IN THE NATIONAL TRANSPORT NETWORK

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PEOPLE FOR PUBLIC TRANSPORT

People for Public Transport (PPT) is an organisation devoted to the improvement and promotion of public transport in South Australia, especially in the Adelaide region. As such our focus is urban, but we are in sympathy with groups seeking to expand the role of rail outside as well as within urban areas. We are also aware that interstate and intrastate country rail lines pass within cities, and so can impact on urban road traffic and urban rail services.

We have chosen to present our submission within the parameters of the *Emerging Issues* listed in the *Information and Issues* booklet and discuss some of the points mentioned under headings of the issues raised.

1 EFFECTIVE AND EFFICIENT USE OF RAIL

Should responsibility for the administration and operation of interstate rail networks rest with the Commonwealth Government, State/Territory Governments or other parties in the future?

The Commonwealth should have an over-riding authority, through a National Track Authority, to ensure safety and adequate upkeep of interstate rail networks. This, can, however, be mediated through other bodies, eg State Governments or private owners, although we prefer the Commonwealth to own the track. It is important that the interests of non-interstate users sharing the same corridor be represented. The standardisation of the Adelaide Melbourne line, while basically desirable, had the unfortunate effect of closing three stations on the suburban line to Belair. This was not an inevitable outcome, and the source of blame is not certain. The standardisation of one line in the double track meant the suburban trains had to run on a single track, with four passing loops. The number of loops was considered inadequate for running a service stopping at all stations as before.

The result of this upgrading of the interstate rail line was three closed stations, with considerable commuter anger, and the closing of platforms on the side of the line where the standard gauge ran. It is not clear whether State or Commonwealth authorities were to blame, or whether it was a case of poor negotiation between them, but the result was undesirable from the point of view of urban public transport.
According to the Friends of the Belair Line, a single additional passing loop would have solved this problem.

Should responsibility for the administration and operation of intrastate rail networks rest with the Commonwealth Government, State/Territory Governments or other parties in the future?

We prefer the administration of these lines to be primarily in the hands of the State Government, except in the case of privately owned lines. These would mainly be short lines owned by industries or small scale tourist ventures. If the operator of a privately owned line wanted to close it, the State Government should have the option of buying it if it is in the interest of the State to keep it open. The State Government should have the right to inspect any privately owned lines for safety purposes, and the Commonwealth should be able to exercise this right, should it be considered that the State Government is failing in its duty to maintain safety standards. This Commonwealth right should also apply to State Government owned lines. State Governments should be able to obtain Commonwealth funding to help maintain, open and reopen intrastate lines, should a need be proved. Where private operators run trains on the lines, track access fees should normally be sufficient to keep existing lines in good condition, but Commonwealth help may be needed for upgrading, gauge changes, extensions and new lines.

Liaison between Commonwealth, State, and private operators, if any, should be maintained where interstate and intrastate carriers use the same lines, and where the lines are linked, or potentially linked (eg join or almost join).

Should governments maintain or acquire transport corridors, particularly in urban areas, where land asset values may be high?

Yes. It is important to maintain or acquire corridors for rail, to ensure the benefits of rail transport: reduced greenhouse emissions and general air pollution, reduced traffic congestion, les transport accident trauma, more efficient long haul transport of goods.

There is pressure from some quarters to build urban freeways, which would involve the use of more land than building railways along the same corridors, as road transport involves use of many vehicles instead of one train - goods or passenger. The retention or acquisition of land for freeways would be more expensive than for rail because of greater width of corridor, entrances and exits, etc. Light rail can be built within existing roads, although a dedicated corridor is often preferable.

In urban areas, however, it is important to avoid or minimise acquisitions of residential property, because of the disruption and distress caused by people losing their homes, even if compensated. However, existing corridors, including freeway corridors, should be retained if there is reasonable likelihood of their being useful for heavy or light rail in the next fifty years. While not in use for rail they can be used for parkland, with foot and bicycle paths. In heavily built up areas future railways could be put underground.

Should governments continue to invest in rail infrastructure? If so, at which level of government should these investment decisions be made?

Both State and Federal Governments should continue to invest in rail infrastructure. Maintaining a good railway network is vital for Australia's future, especially since early next century Australia will be faced with rising oil prices and a need to reduce greenhouse emissions, necessitating energy-efficient transport, such as rail. The level of Government involved will depend on whether it is an urban, country intrastate or interstate line, but the Commonwealth should be prepared to fund all three to some extent, taking primary responsibility for the interstate lines, and supplementing state funds where necessary for intrastate lines.

How should investment in rail infrastructure be funded?

What pricing mechanisms should be considered for adoption to provide revenue for rail services?

The Government should fund rail infrastructure from general taxation revenue, track access charges and fuel excise from rail or a carbon tax.

In its submission to the House of Representatives Standing Committee on Communications, Transport and Microeconomic Reforms's Inquiry into Federal Road Funding (p.58) the Australasian Railway Association (ARA), calculating the environmental costs of CO_2 emissions diesel fuel at 14.8c litre, suggested a carbon tax at this rate (ARA submission p 58).

Revenue on present efficiencies from road trucks and rail were calculated as follows:

ENVIRONMENT EXTERNALITY

ROAD Cents/ntk

6-Axle Articulated	.51
8-Axle Articulated	.43
Double Road Train	.30
RAIL	
	.15

(Based on Figure 7.4)

See also PPT supplementary submission to Inquiry into Federal Road Funding (Vol 9, pp 2253,2254).

Urban public transport could also receive voluntary funding from commercial beneficiaries (shops at railway stations, businesses who have less need of parking space because their workers arrive by train, light rail) either at the infrastructure stage or to help run services.

Some infrastructure investment could come from private companies, in which case they should receive a portion of the track access charges, at least for a certain number of years.

Revenue for rail services can come from track access charges, carbon tax/fuel excise, fares and freight charges, payments from commercial beneficiaries and if needed subsidies from general taxation revenue.

Pricing should not be so high as to discourage customers. This could lead to an increase in road freight and private car use, necessitating even more expensive investment in roads.

> *Are definitions of rail transport community service obligations (CSOs) appropriate to today's circumstances?*

The concept of CSO needs to be redefined in the light of a comprehensive transport policy taking into account economic, social and environmental factors. The concept that some services are potentially profitable and others (generally passenger) are not, ignores the indirect costs of not having the service (externalities) and the social and environmental benefits of maintaining or introducing apparently unprofitable services.

Economic Factors

<u>Relative cost of building and upgrading rail and competing infrastructure</u>

We do not have figures for the cost of building roads or rail, except that we note that according to the National Transport Planning Taskforce presentation by the National Rail Corporation (1994), the average investment per net tonne kilometre per year

1986-1992 for road transport was $0.013, while for the national rail network it was $0.005/yr/NTK.

However, it is generally cheaper to upgrade rail than road. It was estimated that upgrading the Goulburn-Yass rail line to fast freight train standard would have cost $95 million (1994 prices), about 20 per cent of the cost of upgrading the Hume Highway between Goulburn and Yass with bypasses (*Rail and Urban Public Transport*. Parliamentary Research Paper 12 p.20)

Max Michell, of SAMRON (Rail 2000 Conference and public meeting: Adelaide 1997) said $80 million spent to reduce the steepest grades with some realignment on the Adelaide Melbourne railway line between Mount Lofty and Murray Bridge would take 50 minutes off the rail freight journey. By contrast, $138 million was spent upgrading a short section of Highway One, "The Devil's Elbow", near Adelaide, mainly to prevent truck accidents (PPT:Federal Road Funding Vol 9 p. 2255).

Philip Laird, in his supplementary submission to the Inquiry into Federal Road Funding says the BTCE study for the National Transport Planning Taskforce (1995 p. 76) gives a benefit cost (BCR) ratio of 4.0 for limited work between Adelaide and Melbourne, and a BCR of 3.2 for an outlay on this corridor of $170 million, including $50 million to provide capability for double stacked containers between Adelaide and Melbourne (and therefore to Perth since Adelaide Perth already has this capacity). He says such work could easily be combined with easing of grades and curves on the eastern side of the Adelaide Hills to reduce the need for banking locomotives for heavy west bound trains and to reduce transit times and freight costs for all Melbourne-Adelaide trains (V.9, 2225).

Relative cost of Externalities from Road and Rail

Greenhouse emissions

The economic effects of Greenhouse emissions cannot at present be quantified, but are likely to be considerable. It has been postulated that the frequency of El Nino events is already increasing because of greenhouse warming. This has obvious effects on agricultural productivity and increases the risk of bush fire. The severity of the current disastrous forest fires in Indonesia and Malaysia has been increased by El Nino dryness, and with greenhouse warming increasing the frequency of El Nino events, such disasters may be repeated, in Australia and elsewhere. Parts of northern Australia are currently suffering major bush fires.

Greenhouse warming would also tend to make tropical cyclones more severe and to occur in higher latitudes than before, leading to loss of life and property and reduction in tourism, especially along the Queensland coast.

Carbon dioxide (CO_2) is the most significant contributor to the enhanced greenhouse effect from transport. In comparing road and rail transport the energy used per tonne kilometre of freight or per passenger kilometre is the most significant factor, although the fuel used and the directness of the route are also factors, favouring road slightly in the case of intercapital freight.

The Bureau of Transport and Communications Economics Paper 1994 (BTCE 94) states that rail is 83% as emissions-efficient as road for intercapital freight. However, rail is being compared with highly efficient intercapital trucks which may use a different fuel from trucks travelling shorter distances.

Road distances are given as 94% those of rail, but upgrading of rail track could shorten rail distances (BTCE 94 p.213).

BTCE 94 says that replacing 37.5% of intercapital trucking with rail freight would reduce carbon dioxide emissions from all Australian trucking by 0.5% (Ch. 12, pp 207-218). However, *Australian Transport and the Environment* (Australian Bureau of Statistics [ABS] 4605.0, 1997) says that the vast majority of rail freight is intrastate, almost 94% of rail freight being carried within Western Australia, Queensland and New South Wales. Much of this is taken to ports for export. (p. 31)

This indicates that savings from transfer of freight from road to rail may be much greater than that indicated by BTCE 94, although intrastate trucking tends to involve lighter goods, such as foodstuffs, and train traffic heavy raw materials (there is however room for increasing the proportion of grain carried by rail).

Laird says that articulated trucks used more than 2 500 litres of diesel and carried 89 Billion tonne kilometres for the 12 months ending 30 September 95, whereas rail used less than 550 million litres of diesel plus some electricity for almost 1000 billions tonne kilometres of freight in 1994-95. Laird says this makes rail about 4 times as energy efficient as road. These findings have to be modified slightly because of slightly greater length of rail lines. BTCE 94 says rail is slightly less emission efficient with regards to CO_2. (See above.) This may be due to use of coal derived electricity for some trains, or because of more efficient non-diesel fuels used by some trucks (eg LPG, CNG). I have no information on the latter. Notwithstanding we consider Laird’s findings to be basically valid.

BTCE *94 also* identified reductions in public transport fares as a significant method of reducing greenhouse emissions from urban

transport (4 per cent for a reduction of fares to 80 per cent of current levels and a ten per cent reduction in CO_2 equivalent emissions from commuting and one per cent from non-commuting travel) with net social benefit.) (Chapter 12)

> Reduced public transport fares would increase patronage of public transport. A very large proportion of the social benefits of over $8 billion by 2015 would be due to reduced urban traffic congestion, At the maximum level of implementation assumed in chapter 15, a cumulated total of about 26 million tonnes of CO_2 equivalent emissions could be avoided. (BTCE 94 p. xl)

Land based urban public transport consists of heavy rail, light rail, and buses. All have a place in public transport. Rail in dedicated corridors has the advantage of speed and not being subject to delays in road traffic, although it may sometimes be delayed by other trains. The relative energy efficiency of all types of public transport is higher than that of the private car, but exact figures differ from source to source. *Ecologically Sustainable Developments Working Groups: Final Report - Transport* (1991) gives megajoules/ passenger-km as follows:

(Urban)	Car	2.9
	LCV	3.8
	Bus	1.6
	Train	1.6

whereas *Mobility in a Clean Environment (1990)* claims that trains are 8 times, trams 3 times and buses twice as energy efficient as cars. There are a number of factors to take into account, one being the number of passengers per vehicle, compared with the potential number of passengers. Electrification affects figures differently, depending on the source of the electricity, coal derived electricity, adding 30% to greenhouse emissions, natural gas derived reducing by 20%, solar/wind electricity having no greenhouse emissions except those involved in construction of generating equipment (ABS 1997, p.152). Urban rail has the capacity to carry light freight, reducing use of LCVs. The San Diego Trolley Company acts as a public transport provider by day and carries light freight at night (Fielding Report [SA Government, 1989?]).
Urban light rail tends to be more popular with commuters than buses, and therefore has greater capacity to reduce car use.

Future Fuel Costs

In considering costs of various modes of transport the likely future cost of oil, the current basis for most of our transport fuel, needs to be taken into account.

B J Fleay, in *The Decline of the Age of Oil*, testing predictions of the US geologist, M K Hubbert, paints an alarming scenario.

In 1950 Hubbert correctly predicted that oil and gas production in the lower 48 states of the USA would peak in 1973. Fleay bases his predictions on Hubbert's theory, proved right in the USA case, that peak production follows shortly after peak discovery and is followed by rapid decline in production, as oil becomes more expensive to extract and the Energy Profit Ratio (EPR) (the energy content of the fuel divided by the energy used in its production) declines. Fleay predicts that production of oil will peak in the Arabian Gulf region in about 2020 and in the rest of oil producing regions in about 2005.

Australian oil production is expected to peak in 2000, then rapidly decline. The Australasian region was not in a particularly favourable region for the formation of oil at the time when most oil was formed.

Fleay argues that discoveries are declining and that giant oil fields are discovered first, so any remaining discoveries are likely to be of small fields or in places where oil is difficult and expensive to extract.

Declining Australian production of oil, followed by a world-wide shortage, will mean an increasing import bill for oil which has serious economic implications for Australia.

Own comment

While ultimately transport should be based on renewable fuels, in the shorter term fuel economies should be sought. Renewable fuels may prove to be expensive, necessitating continued economies in transport. We believe that Australia's transport dollar would be better spent in upgrading more fuel efficient modes of transport, such as rail and urban public transport, rather than spending huge sums upgrading interstate highways and building urban freeways. (PPT 1997)

Costs of Road Trauma

The cost of road accidents in 1993 was estimated AT $6.1 billion (Transport and Greenhouse BTCE 94 (p.461) quoting BTCE 1994d). This estimate is acknowledged as very rough. The health cost of air pollution has been estimated as between 0.005 and 0.12 cents per kilometre travelled (BTCE 94 p. 460) The difference stems largely from different estimates of the cost of fatalities.

Estimates published by *Action for Public Transport* (August 1996) are $6 billion for road accidents, $4 billion for road congestion and at least $1 billion for noise and air pollution. (PPT Vol 3, p.615 - date amended from May to August)

While rail accidents also occur, the rate of fatalities and injuries associated with all rail transport and road based urban public transport is considerably lower than for road transport.

> *Are environmental considerations important? If so, should these considerations be part of a national strategy for rail?*

Yes, environmental considerations are important. There is no point in a country being affluent if the population does not have the capacity to enjoy that affluence. Clean air, clean waterways and the natural environment rank alongside consumer goods as important elements in quality of life. While we are not advocating starvation in a pristine environment, we consider the emphasis on increasing nominal wealth at the expense of the environment is misguided.

Air pollution from transport is a major factor in public health. Anything that reduces it improves public well being and reduces health costs.

Ultimately the economy depends on the environment, not vice versa. For instance, agriculture depends on soil and climate and fisheries depend on clean waterways and sustainable fishing practices. Tourism is highly susceptible to environmental factors. (See also above on CSOs - Externalities, *Greenhouse*).

Is consistency (or standardisation) across rail networks important? (For example in areas such as communication systems, pricing practices, operating rules and safety standards.)

Consistency is important in relation to safety standards. If communication systems were consistent it would help different adjoining networks to communicate with each other. Similar operating rules would make it easier for workers transferring from one system to another, and might improve safety by reducing possible confusion as to practices in the case of transferred workers and adjoining systems. Gauge standardisation of systems adjoining standard gauge rail is desirable where freight or passengers are likely to transfer. Pricing standardisation is not important.

ACCESS AND UTILISATION OF THE RAIL NETWORK

What are the costs of underutilisation of rail and which parties carry these costs?

The costs of underutilisation of rail lie in urban road congestion, higher greenhouse emissions, increased accidents on country roads with truck involvement, and higher road building costs.

Urban Road Congestion

If existing urban rail corridors are underutilised, traffic congestion and use of the private car is higher than it need be, leading to higher greenhouse emissions, urban air pollution, etc (see above). It is important to have accessible and frequent train and tram services, with stations at suitable places and rail feeder services, in order to make good use of existing networks.

Involvement of trucks in road crashes (from PPT Vol 9, p. 2256, quoting ARA submission to Road Funding Inquiry)

> Accident statistics show that heavy vehicles are over-represented in road fatalities. Truck-involved crashes contribute 18% of road deaths overall, of which 80% are road users other than the truck driver. Heavy vehicles ... constitute less than 4% of all registered vehicles and account for about 71/2% [seven and a half] of vehicle kilometres travelled. Involvement rates for articulated vehicles are higher than the average for all heavy vehicles (ARA submission to Road Funding Inquiry p.53).

Road Building Costs

Failure to utilise existing networks leads to increased building and upgrading of roads. See above on relative costs of upgrading rail and road.

A railed public transport system is almost as cheap per kilometre to build and equip as the projected cost of a freeway. (Compare $220 million for 33 km for a electric railway in Perth [including trains] with the projected cost of $112 million for a 21 km Expressway in Adelaide, for which the government will not be collecting fare revenue.) (PPT 1995 based on Newman).

A light rail system in Sydney under construction in 1996, with a projected length of 15.9 km (if extension went ahead) had a total projected cost below $100 million, less than a tenth of the cost of the M5 East and the Eastern Distributor of the same length of route. (Newman and Zhukov: 1996)

> *Is it necessary for freight routes to include dedicated rail line in high use metropolitan areas. If not, how should the competitive needs between freight and passenger service be managed.*

If there are major delays to commuter services or freight, or safety considerations, this seems to be the best solution. Avoidance of delays would make rail more competitive as a freight carrier and increase passenger numbers.

> *How should rail be integrated with other transport networks to increase utilisation of rail networks?*

Urban Rail

Feeder buses and coordination with linking buses, trams and trains.

Rural Passenger

Linking with other rail, buses. While city stations should be in central city, in a case like Adelaide, where interstate passenger services do not end in the central city, there should be good public transport services, preferably rail, between passenger terminal and central city. There should be similar links between passenger rail stations and airports.

Freight

Transference between mode: eg road/rail, rail/sea should be made easy. The closing of the bogie exchange at Dry Creek, near Adelaide, where country broad gauge meets standard gauge, resulted in transfer of 55 000 tonnes of export grain (bound for Port Adelaide or Outer Harbour) from rail to road.(PPT Vol. 3, p. 613)

Is there a role for governments in facilitating increased integration between different modes of transport?

Since the government owns railway lines, ports, etc, there is obviously a role available for government. However, the Government should also liaise with private transport providers (eg transport companies who may use rail) to facilitate integration. Federal and State Governments should have an over-riding transport policy which seeks integration of transport modes and easy links between them.

To what extent should use of land surrounding rail facilities be integrated with rail networks?

There is value in siting shopping centres, other businesses, government agencies, schools, child-care centres etc near railway stations and public transport interchanges, as this increases convenience and public transport use. Schools and child care centres should be far enough away for children not to be affected by transport emissions and noise but within easy walking distance (eg not more than a few hundred metres) of trains. Far enough away may in some cases be very close, and the alternative, car emissions, has to be balanced against this. Medium to high density housing can also be sited near railway stations.

As far as possible factories and ports etc should be adjacent to railway facilities. Sidings to factories could be reintroduced.

INVESTMENT AND OWNERSHIP ARRANGEMENTS

Are existing levels of investment in rail appropriate?

No. They are too low, considering the capacity of rail to reduce greenhouse, and also the tourist potential of rail. Money is being wasted on expensive road upgrading when upgrading rail would be cheaper. More money needs to be spent on rail, but less than would be needed to upgrade roads to accommodate expanded road freight and car based urban commuters. (See above under CSOs Relative cost of building and upgrading rail and competing infrastructure.)

What objectives should be used when determining public investment in rail?

Are the objectives of private and public investments in rail compatible?

If the objective of private and public investments in rail are not compatible, how may the competing interests be best served?

Governments should take into account all costs and benefits: direct costs and benefits, and environmental and social externalities, future trends including 21st Century oil prices. If the investment is needed, Governments should be prepared to make it, although private investment should not be refused, provided it does not hamper future government policy making.

There have been cases where private enterprise made a publicly run service more viable, for instance, when West Coast Rail, took over the publicly run passenger service to Geelong. However, any private investment must include guarantees to maintain the service unless the Government decides to the contrary, and public interest must prevail over private profit.

Should broader policy objectives be pursued through conditions attached to the use of public rail by private operators?

Yes. If necessary to pursue these objectives.

E N D

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