The Parliament of the Commonwealth of Australia

House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform

Inquiry into the Role of Rail in the National Transport Network

SUBMISSION

AUSTRALASIAN RAILWAY ASSOCIATION INC

PO Box 94
Market Street
Melbourne
Victoria 8007

Telephone (03) 9614 5162
Facsimile (03) 9614 5514

OCTOBER 1997

THE AUSTRALASIAN RAILWAY ASSOCIATION

The Australasian Railway Association Inc (ARA) is the peak industry body for the rail sector in Australia and New Zealand. The ARA represents the interests of both private and government owned railways; manufacturers of locomotives, rollingstock, signalling and communications; equipment suppliers; maintenance and construction companies; service providers, financiers and consultants. The Association was founded in 1994 and currently has a membership of 85. It is governed by an Executive Committee elected annually by members and is funded entirely by members' subscriptions and contributions. The current President is Mr Ray McCutcheon, General Manager Westinghouse Signals Australia.

Members of the Association employ over 75,000 workers in virtually all parts of both countries with the rail industry in Australia providing significant economic benefit to the country of around $7 billion per year. Association members are also large exporters of goods and services and their rail expertise is widely recognised in the region as being of the highest quality. The Australian rail industry presently holds overseas contracts worth about $500 million, primarily in Asia.

The majority of members (90%) are in the private sector and are profitable enterprises trading in highly competitive domestic and international markets . Members of the Association from both public and private sectors, report their financial results in conventional profit and loss and balance sheet format in accordance with accounting standards laid down by recognised professional bodies and regulatory authorities.

All capital expenditure is fully accounted for, including depreciation of capital stock. Investments in rail infrastructure are generally financed by borrowings or by government grants. Both incur ongoing capital charges in the form of interest and capital repayments and depreciation.

Competition policy has resulted in a number of States moving to establish separate rail infrastructure entities and generally these bodies have been required to adopt "commercial" style accounts that include full accounting for capital investment and capital stock.

At present, most railway operators and infrastructure providers are owned by governments and some rely on a range of means to supplement user revenues to provide services at less than full cost. The much-quoted "rail deficit" is used to justify open-ended funding of road infrastructure. It is however, a myth created by out-of-date government accounting practices and inadequate statistical analysis.

In reality, the rail sector comprises a number of parts, each with quite different business and community objectives. Freight services, which are in direct competition with road transport, operate as commercial enterprises at or close to profitability; urban and rural passenger services are community services financed by fares and taxation; and infrastructure providers operate with only partial cost recovery, like the road sector.

Both public and privately owned railways enjoy some small tax benefits, but most pay the full range of taxes including diesel fuel excise.

CONTENTS

EXECUTIVE SUMMARY

The Rail Industry

The Australian rail industry comprises a range of sectors conferring a wide range of benefits on the nation's economy. The industry plays a major role in moving the nation's freight and in urban areas contributes significantly to reducing road congestion and pollution. The industry has a highly skilled workforce and in many rural and regional centres, employment in the rail or rail related sectors comprises a substantial portion of the employment base.

Rail reforms

The rail industry has undergone significant reforms in the past few years. Government owned rail authorities have been corporatised with a view to being privatised or are in the process of being privatised. Competition policy arising from the 1993 Hilmer reforms has resulted in private operators competing on the publicly-owned national track network.

Benefits to the nation

This submission examines the benefits that the rail industry provides to the nation and to the cities in which it operates. Benefits flow to a broad constituency of freight companies, road users, rural and metropolitan regions. The rail industry can help meet the nation's transport needs into the 21st century by being part of an integrated transport system.

The Australian rail industry is developing a high overseas profile and currently exports $0.5 billion worth of goods and services each year, primarily to Asia. These countries are increasingly seeing Australia as an innovative supplier of quality rail products, services and technology. (See separate submission by the Australian Railway Industry Corporation)

Rail needs a level playing field

However, to fulfil its potential as part of the nation's transport system, rail needs a level playing field with road, particularly with regard to infrastructure funding and road cost recovery from articulated trucks.

The present approach to transport funding by federal and state governments applies broad social and economic criteria to road funding, but narrow commercial analysis to rail projects. Consistent evaluation criteria would see some rail projects considered as road projects because of their benefits to the road network in terms of reducing congestion, pollution, and road accidents.

In other words, the positive social benefits that are attributed to road projects are equally attributable to rail projects.

Competition policy for all transport modes

There is a lack of commitment by federal and state governments to fully implement the Hilmer principle of competitive neutrality in regard to road and rail access pricing. This has created a bias in favour of heavy road vehicles and against rail. Current road user charges for road use by heavy vehicles are deficient in allocating and recovering total costs for this class of vehicle for both the road damage caused and the external costs imposed on other road users, particularly accidents and congestion.

The economic and social benefits of rail include :

Freight movement

56% of the non-urban rail and road freight task in Australia on a net tonne kilometre basis is undertaken by rail.

Lower cost

Railway line construction is cheaper and requires less land than an equivalent road. Increased use of rail services decreases the need for road improvements and lowers road maintenance costs.

Transit speed

High speed services have the potential to bring regional centres closer to capital cities, reducing development pressures on those cities.

Fuel use

Rail freight services are at least three times more fuel efficient than road transport. Urban rail services are at least twice as fuel efficient as cars.

Greenhouse emissions

80% of Australia's greenhouse emissions attributable to transport are caused by road transport, while only 2% are caused by rail transport. Increased use of rail services is a "no regrets" greenhouse gas abatement measure, which would help Australia contain its greenhouse gas emissions.

Congestion and pollution

Rail freight and passenger services help limit noise, pollution and urban congestion costs of around $6 billion per year. Australia's urban rail systems keep over 300 million car journeys off roads each year.

Safety

Road accidents cost Australia $6.1 billion per year, accounting for over 90% of the total cost of transport accidents in Australia. Road fatalities cost the community $1.6 billion per year.

Rail passenger and freight services have an enviable safety record and help contain these costs to the community.

Land value

In built-up areas, urban freeways lower land values along their route whereas urban rail systems increase land values. Urban rail lines spur business and real estate development.

The benefits of rail transport contribute significantly to the nation's economic development and welfare. As Australia moves into the 21st century, it is imperative thatfederal and state governments develop balanced transport policies that enable Australia's rail industry to maximise its potential as an efficient mover of goods and people.

RECOMMENDATIONS

Competitive Neutrality

1 Rail operators, as "off road" users of diesel fuel, must be exempted from paying diesel fuel excise OR the revenue collected from this tax should either be returned to rail operators or invested in rail infrastructure.

2 A mass distance charging system must be implemented for articulated trucks to supplement registration fees and fuel excise charges. This will ensure that vehicle road user charges accurately match the actual road costs incurred and eliminate the present cross-subsidy of light vehicles travelling short distances subsidising heavy articulated vehicles travelling long distances.

3 Road pricing must be reviewed to determine the effectiveness of full road user charging, including congestion pricing. Road management by federal, state and local commercial enterprises also needs to be investigated.

4 Dangerous goods regulations applying to rail and road must be uniform.

5 Current road transport regulations must be strictly enforced by authorities.

Investment

6 The Federal Government must develop a national integrated land transport policy.

7 Federal and state transport ministers must agree to establish the National Rail Highway, similar to the National Highway System. The National Rail Highway must comprise the existing interstate standard gauge system, linking the capital cities and their ports along with other strategic routes such as those to Newcastle, Westernport, Cairns, and Mt Isa.

8 The Federal Government must accept responsibility for funding the National Rail Highway as it funds the National Highway System and Roads of National Importance.

9 Federal and state governments must apply the same evaluation criteria to road and rail projects taking into account economic, financial, social and environmental considerations including greenhouse gas emissions.

10 Investment decisions in the National Rail Highway must be coordinated by a single body.

11 Federal and state governments establish a "Transport Fund" from which funding is allocated to rail or road projects based on comparative evaluation criteria.

12 The Federal Government must review the recommendations of the National Transport Planning Taskforce and determine the economic and commercial benefits of a comprehensive mainline rail investment program.

Track access

13 Federal and state transport ministers must establish a national track access regime that balances the needs of both intra state and inter state operators and provides a single point of entry to the interstate mainline rail network.

14 The national track access regime for the interstate mainline rail network must encompass all capital cities on the interstate standard gauge network.

15 Access pricing must be at a level that is affordable by rail operators and allows them to be competitive with road transport.

Harmonisation

16 Federal and state transport ministers must cooperate to achieve the harmonisation of rail regulations, safeworking, operations and communications standards between states.

Rail and the environment

17 Urban road and rail projects must be evaluated according to the same criteria taking into account social, economic, environmental and financial considerations

18 Federal and state governments must develop integrated land use and transport planning policies in order to minimise road space, fuel use, greenhouse gas emissions, noise, congestion and accidents attributable to urban road transport

19 Federal and state governments must take responsibility for funding extensions to urban and long distance commuter rail public transport systems

20 Federal and state governments should evaluate the economic benefits of high speed rail links to regional centres outside urban areas

21 Federal and state governments must take the lead in implementing motor vehicle demand management measures

22 Urban infrastructure development and planning must ensure full consideration of greenhouse implications so that the fossil fuel dependency of urban areas is reduced

Rail Research and Advisory Body

23 The federal and state governments establish and fund an independent, non-government research and advisory body “AustRail” to investigate and make recommendations on economic and regulatory matters affecting the rail industry

1. The Australian Rail Industry

1.1 The Rail Network

Australia's public rail systems comprise 34,530km of track, while private rail operators have 6,020km of track including 4,100km of sugar cane railways in Queensland. The rail industry also includes the 240km tram network in Melbourne, the 14km tram system in Adelaide, the 3.6km tram system in Sydney, the 8.5km skitube from Jindabyne to Mt Kosciusko in the NSW Snowy Mountains and the 3.6km Sydney monorail.

The mainline rail network comprises the 6,920km standard gauge interstate system plus the 1,680km narrow gauge link between Brisbane and Cairns and the 970km narrow gauge line between Mt Isa and Townsville.

1.2 Economic Contribution

The industry comprises a range of sectors: intercapital freight and passenger services, country freight and passenger services in each state, commuter and urban passenger services, public and private heavy haul railways for coal and iron ore, private passenger and freight operators, manufacturers, suppliers, consultants, track access agencies, maintenance and construction contractors and freight forwarders. The role of rail in the national transport network needs to be considered in the context of all these components.

There are over 120 companies in the rail industry in Australia employing over 75,000 people in a wide range of industries. Public rail systems employ approximately 48,000 people, while 2,400 are employed by private rail operators. Over 25,000 people are employed in support industries such as manufacturers, suppliers and contractors. In many rural and regional centres, employment in the rail or rail related sectors comprises a substantial portion of the employment base.

The industry contributes $7 billion per annum to GDP including $500 million in export income, primarily to Asia. These countries are increasingly seeing Australia as an innovative supplier of quality rail products, services and technology.

Domestic manufacturers produce locomotives, freight wagons, passenger carriages, track and signalling equipment and their component parts for domestic and overseas markets while providing Australia with a skilled manufacturing workforce and avoiding imports of this equipment (large prime movers used by the trucking industry in Australia are fully imported). With significant haulage of iron ore and coal, Australia's rail industry has also developed an enviable reputation for the design and construction of world class heavy haul railways.

The following tables indicate rail's efficiency in contributing to different sectors of the national economy.

Transport required to produce $100 of input to selected sectors of the national economy

SECTOR OF ECONOMY	RAIL	ROAD
Agriculture	$0.46	$3.85
Food & general groceries	$0.82	$5.86
Petroleum & coal products	$0.29	$1.67
Non-metal mineral products	$0.80	$12.08

Source: Apelbaum Consulting Group

Input by sector compares how much needs to be spent on rail and road to obtain $100 worth of raw materials or input. For example, in the agricultural sector inputs include items like fertiliser, fuel or other raw materials. For food and general groceries, inputs include items like packaging, flour etc.

Transport required to produce $100 of output to selected sectors of the national economy

SECTOR OF ECONOMY	RAIL	ROAD
Agriculture	$2.32	$10.86
Food & general groceries	$0.11	$3.04
Petroleum & coal products	$0.43	$5.22
Non-metal mineral products	$0.28	$6.13

Source: Apelbaum Consulting Group

Output by sector compares how much needs to be spent on rail and road to obtain $100 worth of production or output. For example, wheat or wool are outputs of agriculture. For food and general groceries, output is packaged food, fruit etc.

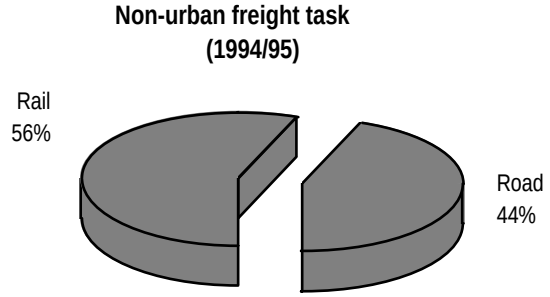
2. The Australian Rail Task

2.1 Freight Task

The Australian railway network is a significant national asset and plays a key part in the economic well being of the country. Australia's extensive rail system plays a major role in hauling the nation's freight, serving intercapital markets and many important economic regions. Railways are essential to the nation's economy because they form an integral part of the distribution process for intercapital freight and a range of regional produce and bulk export commodities.

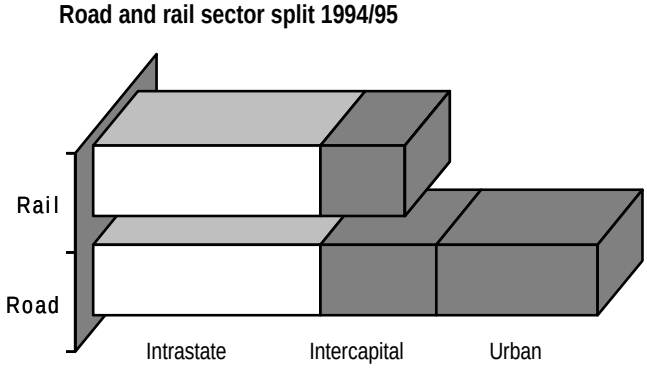
Rail freight haulage has been steadily increasing from 85.8 billion net tonne kilometres in 1989-90 to 104.3 billion net tonne kilometres in 1995-96.

In 1994-95, rail's share of the combined rail and road non-urban freight task was 56% or 99.9 billion net tonne kilometres.



Source: Apelbaum Consulting Group

Rail freight tonne kilometres are all non-urban and in 1994-95 17% were intercapital, 45% intrastate and 38% private rail while road freight tonne kilometres were 32% urban, 45% intrastate and 23% intercapital.



Source: Apelbaum Consulting Group

Principal commodities hauled by government railways are coal, grain, ores and minerals, steel, containers, manufactured industrial products and general freight. Private freight railways are predominantly used for iron ore in north-west WA and Whyalla in SA, non-ferrous ores in Queensland, NSW and Tasmania and sugar cane in Queensland.

Rail hauls 40% of intercapital rail and road freight tonne kilometres, varying from 70% of east coast - Perth freight to 23% of Melbourne - Sydney freight. As such, an efficient, world class long distance rail system is critical in minimising internal transport costs for a range of manufactured products, general freight, containers and other commodities.

Virtually all export coal, iron ore and wheat is carried by rail from inland production areas to ports hundreds of kilometres away.

These three commodities comprise about 20% of Australia's exports and are worth around $1,400 million annually to the nation's export economy. Consequently, an efficient, world class rail system is also vital to Australia's export competitiveness - exemplified by Australia's heavy haul iron ore railways in north west Western Australia operating at world's best practice.

2.2 Passenger Task

Australia's railways play an important role in providing passenger services. This is primarily in urban areas and for outer urban commuter purposes, although long distance passenger trains are well used by rural communities and tourists.

In 1995-96, 431 million passenger journeys were made using Australia's urban passenger services, while 10.5 million non-urban rail passenger journeys were made. These represent increases of 6% and 29% over 1994-95 passenger journeys (406 million and 8.6 million respectively). At an average vehicle occupancy of 1.25 people/car in urban areas[1], in 1994-95 this represented 325 million fewer urban car journeys.

In 1994-95, the most recent year in which statistics for urban rail journeys were split into peak and non-peak, there were 248 million peak hour journeys and 158 million off peak journeys.

At an average peak hour vehicle occupancy of 1.23 people/car, [2] Australia's urban rail services in 1994-95 kept 201.6 million car journeys off the roads in peak hours.

Urban and commuter rail services generate significant social benefits by providing an efficient mass transit alternative to cars, helping to reduce road congestion, accidents, fossil fuel consumption and greenhouse gas emissions.

---

1 Austroads Performance Indicators, 3rd Quarter 1997

2 ibid

3. Competitive Neutrality

3.1 Creating the level playing field

The ARA considers that the concept of competitive neutrality is the single most important factor affecting the future development of the rail industry in Australia.

Accordingly, the Association strongly supports the Heads of Agreement signed at the September 1997 Rail Summit in Melbourne providing for the investigation of all relevant matters affecting competitive neutrality between road, rail and sea.

The National Competition Policy Report by the Independent Committee of Inquiry in August 1993 makes the following statement :

> "Differences in regulatory and other requirements imposed on firms competing in the one market may distort competition and hence undermine market efficiency."

The Hilmer Report on National Competition Policy (1993) stated

> "Government businesses should not enjoy any net competitive advantage by virtue of their ownership when competing with other businesses."

Firms should compete on the basis of their relative intrinsic efficiencies, without any net competitive advantage arising through ownership. Government enterprises should be subject to the same regulatory and financial regimes as their private sector competitors. Similarly, private sector firms competing with government enterprises should not have regulatory or financial advantages over their public sector competitors.

This was recognised by Federal, State and Territory governments in 1993 when agreeing to develop a national competition policy.

One of the principles agreed to was:

> "As far as possible, universal and uniformly applied rules of market conduct should apply to all market participants regardless of the form of business ownership."

The National Competition Council reinforced the principle of universal and uniform rules applying to the market by stating that introducing a competitively neutral operating environment for government businesses can deliver a range of benefits, including "more efficient pricing leading to resources being allocated to their best uses"[3]

However, the present transport operating environment is far from balanced with major anomalies in infrastructure funding, regulations, taxation and access pricing between road and rail.

The following table indicates some of the regulatory differences applying to rail and road.

Road/Rail Score Card

PARAMETER	ROAD	RAIL
One stop shop for access	✔	✘
Consistent access price	✔	✘
National standards	✔	✘

[3] "Competitive Neutrality Reform" - NCC, January 1997

National accreditation	✔	✘

- One stop shop for access: a truck registered in one state can operate freely in any other state, whereas an interstate rail operator requires safety accreditation plus track access agreements from each state to operate
- Consistent access fees: interstate trucks pay a flat national charge and do not require access contracts; rail operators must negotiate access contracts and pay access fees that vary between states
- National standards: national operating standards apply to interstate trucks regarding road regulations, speeds, load limits etc, whereas rail operating standards vary within and between states
- National accreditation: once accredited in one state, a licensed truck operator can operate in all other states; interstate rail operators must obtain accreditation for safety, competency, etc from each state, all of which add costs and delays to start up.

There are a number of areas where regulations are more onerous for rail than for road operators. The cost implications of these regulations needs to be assessed to evaluate their impact on rail and road economics.

Such regulations include :

- Non uniformity of state safety regulations, which imposes extra costs in complying with different state requirements and constitutes a barrier to competition
- Investigation of rail accidents is more onerous for rail than for road accidents and the cost is borne entirely by the rail operator. Road accident investigations are not paid for by road transport operators.
- Regulatory creep - road transport operators are able to take risks such as exceeding mass and dimension limits and driving hours with a relatively low risk of penalty. Rail operators have to ensure regulations are adhered to through operational controls
- Dangerous goods regulations are stricter for rail than for road. For example, a rail tanker carrying flammable material is called a “pressure” vessel and must be constructed of metal that is least 10-15mm thick. A road tanker carrying the same material is called a “non-pressure” vessel and requires the metal of the tanker to be only in the order of 5mm thick. Given rail’s superior safety record to that of road, the requirements for road should be at the same standard.

The following is a comparison of access requirements for rail and road networks:

RAIL	**ROAD**
• variable, state based access fees	• fixed national registration and licence fees
• fuel tax (variable)	• fuel tax (variable)
• mass distance charge	• no mass distance charge
• safety accreditation by Inter-Governmental Agreement	• uniform safety regulations
• 22 sets of state based operating rules and regulations	• near uniform operating rules - traffic signals, speeds, rest breaks etc
• various speeds and axle loads	• generally uniform loads limits

• 8 radio communication systems	

The anomalies within the rail mode and inconsistencies between the rail and road modes has led to inefficiencies in the transport economy that must be resolved.

The payment by rail of a road user charge through diesel excise is completely indefensible and has persisted through a total lack of political will to fix the problem.

The marked difference in the cost of access to the transport network puts rail at a severe cost disadvantage and affects the viability of a number of services and corridors.

3.2 Diesel fuel excise

In 1982, the *Diesel Fuel Taxes Amendment Act* abolished the diesel fuel excise exemption scheme and introduced the present rebate scheme for "off-road" users of diesel fuel. However, the definition of "off-road" user was narrowed to exclude activities such as railways, coastal shipping and manufacturers. As a result, Australia's rail operators since that time have paid the same level of diesel fuel excise as road users even though rail operators are "off-road" users of diesel fuel.

Rail operators may only obtain the diesel fuel rebate where there is beneficiation associated with a haulage task, that is value-adding or processing before export. The iron ore railways in north-west WA and some government railways hauling mineral and primary produce are examples of this practice.

In contrast, in 1997-98 other "off road" users of diesel fuel (farmers and the mining industry) will obtain fuel excise rebates totalling $1,400 million per annum. Even Japanese long line fishing boats in Australian waters manage to exploit a loophole to obtain over $90 million per annum in fuel tax rebates.

In 1995 rail operators ineligible to obtain the diesel fuel rebate began to use light fuel oil which was then subject to excise of 6.751c/litre as against 32.537c/litre for diesel. However, the 1995 Federal Budget changed the specification for light fuel oil, making it subject to the same excise level as diesel.

In 1995-96 the level of diesel fuel excise was 33.7 c/litre, which cost Australian rail operators $157.7 million.[4] The total Federal Government revenue in 1995-96 from excise on all petroleum products was $10,305 million (approx. 8.3% of total revenue). Excise from diesel and non-petrol products contributed just under half this at $4,045 million.

If railways, as "off-road users" of diesel fuel, were eligible for the diesel fuel rebate, the impact on Federal Government revenue would be a reduction of 3.9% of excise revenue from non-petrol products or 1.5% of total fuel excise revenue.

The effect on total government revenue would be minimal at 0.1%.

Rail operators are frustrated that they are paying a road user charge of 18c/litre diesel fuel excise and that these funds are not being invested in rail infrastructure.

In 1995-96, this iniquitous tax cost Australia's government railways $84.2 million. The proposed $250 million Federal Government mainline rail investment program over four years from 1998-99 will be far outweighed by the approximately $350 million in road user charges that government railways will pay over the same time.

Paying diesel fuel excise, particularly the road user component, is not economically efficient because it adversely affects rail operating costs.

---

[4] "The Growing Efficiency of Australia's Railways" - Laird, 1997

In 1991 the Industry Commission report *"Rail Transport"* recommended that railways should not be required to pay fuel excise on diesel used for freight purposes on the basis that the price of export commodities would be adversely affected.

This finding was further supported by a 1994 Industry Commission report *"Petroleum Products"* which said that the 18c/litre road user charge should not be levied on rail and that road user charges **applied to rail would distort transport decisions**. The report recommended that the diesel fuel rebate scheme apply to rail freight, noting that none of the diesel fuel excise paid by rail is returned to rail, but that some of it is used for roads. This view has been publicly supported by the NRTC in recent months.

Increased rail costs affect many sectors of the economy, but particularly the export price of bulk commodities like coal and wheat. The NSW Minerals Council, for example, has estimated that a reduction in coal freight rates of $3 per tonne would induce an additional $500 million in coal mining investments in the Hunter Valley with increased coal output of 6 million tonnes per annum. This would have obvious benefits for the region and the economy generally.

60% of Australia's per tonne rail freight task, or 64 million net tonne kilometres (ntks), is ineligible for the diesel fuel rebate. There would be significant savings in internal transport costs and export competitiveness would increase if all rail operators, as "off-road" users, were eligible for the full diesel fuel excise rebate or at least the 18c/litre road user charge.

Payment of diesel fuel excise also adversely affects the costs of operating diesel hauled passenger services. One commuter operator has suggested that the removal of diesel fuel excise could lower fares on diesel rail services in suburban Adelaide and rural commuter services in Victoria connecting major regional centres with Melbourne.

3.3 Costs of access to the transport network

Following the historic Heads of Agreement on September 10, the Transport Ministers must now investigate and resolve the present disparity in track access pricing that exists between rail and road.

In the financial year 1996/97, the National Rail Corporation carried 16.9 billion tonne kilometres of freight and paid $117 million in track access fees to various state authorities to do so. Had the same amount of freight been carried by road, 3100 B-double trucks would have been required with a road access fee of $17 million in registration charges. The cost of road access is 15% of the rail access fee.

In 1995, the National Transport Planning Taskforce estimated taxes and charges as comprising 16.6% of road freight operating costs.[5] At the time, no charges applied to rail operators, but taxes were estimated to comprise 16.5% of rail operating costs of which 12% was diesel fuel excise. Track access charges applying to rail operators have now increased rail's taxes and charges by 25%-30% to over 40% of operating costs, two and one half to three times that of road.

This disparity is caused by inadequate road cost recovery from heavily loaded, long distance articulated trucks, rail's principle competitor for long distance freight haulage.

Mr Ed Burkhardt, the American head of the Australian Transport Network which is acquiring Australian National's Tasrail operations, recently commented that road transport has a huge financial advantage in Australia and that Australia has one of the least level (transport) playing fields in the world.[6]

---

5 "Building for the Job" - NTPT Volume 3, 1995

6 Launceston "Examiner" 29 August, 1997

3.4 Revenue from road users

The road industry, in particular road freight operators, argue that the revenue to governments from the taxes and charges paid by all road users significantly outweighs road expenditure by all levels of government. At a simplistic level this is true. In 1995-96 revenue from all road users from registrations, licence fees, fuel taxes etc was $12,900 million while expenditure on roads by all levels of government was $5,700 million[7].

Some sectors of the road industry argue that all revenue raised from road users should be spent on roads. When fuel excise was introduced on petrol in 1926 and on diesel in 1957, it was done so as a road user charge to be spent on roads. However, the relationship between fuel excise and road funding was broken by the *Commonwealth Aid Roads Bill 1959* which decreed that the revenue raised from fuel excise should be a general tax available for any purpose rather than being specifically allocated to roads[8].

3.5 Road user cost recovery

There is substantial evidence that long distance road freight operators are not paying their full costs of road use.

The argument that road users pay their way has been analysed by the Bureau of Transport and Communications Economics in the paper titled "Review of Road Cost Recovery" - Occasional Paper 90, 1988 and found to ignore two important issues :

- the appropriate allocation of revenues and costs among vehicle types; and
- the level of cost recovery by vehicle type

Allocation of road costs is vital to developing appropriate road user charges. Cars are responsible for 81% of vehicle kilometres and only 0.1% of pavement loading (ie road damage), whereas articulated trucks are responsible for 12% of vehicle kilometres and 67.3% of pavement loading. [9] A rigorous road user cost recovery scheme is necessary to ensure that each class of road user contributes to its share of road construction and maintenance.

The 1988 BTCE paper allocated avoidable road costs among road user groups. The report found that articulated trucks failed to recover their avoidable pavement cost by $750 million per year. This cost under recovery translated to $18,000 per year for the average six axle truck and nearly $50,000 per year for the heaviest vehicles. The report noted that the shortfall from this vehicle group was still large even if such things as sales taxes, customs duties and stamp duties were included. Although that work is now nine years old, its findings are still valid, particularly the principle of allocating road costs to different classes of users.

As well as damage to road infrastructure, society must also bear the "external" costs of road use including crashes, crash trauma, pollution and congestion.

The ARA Submission to the Federal Road Funding Inquiry (February 1997) concluded that on a fully allocated cost basis - road damage, congestion, accidents - articulated trucks under recover their fully allocated costs by 25%. If emissions and noise are included, the extent of truck cost recovery is even lower. Similar research done for Queensland Rail also concluded that articulated trucks under recover their costs. [10]

---

7 "Road Facts '96" - Austroads

8 "Roads Policy and Australian Federalism" - BTCE 1993

9 "Road Facts 96" - Austroads

10 "Road Access Charges in Queensland under the National Competition Policy " - Allan, May 1997

Articulated trucks under recover their road use costs because truck road access fees, unlike rail access fees, are not mass-distance based. This deficiency in articulated truck cost recovery causes more freight to be travelling by road than would be the case if competitive neutrality applied to road access pricing.

3.6 Present road user charges

Road user charges were developed by the National Road Transport Commission (NRTC) in 1992 and were based on the average vehicle in each class in 1991. Road access charges developed by the NRTC combined an "access charge" and a "mass-distance" charge into a single fixed annual registration fee and an 18c/litre road user charge. All road users of diesel fuel pay this charge, but the NRTC acknowledged at the time that a mass-distance charge may be more appropriate for heavy vehicles. In any case, the 18c/litre component of diesel fuel excise cannot presently be considered a "road user charge" since rail pays it too.

Combining an "access charge" and a "mass distance" charge into a fixed annual charge that does not vary with mass or distance assumes that all vehicles can be attributed the same amount of road costs. This is not the case. **Road pavement damage is not linear, but varies with the fourth power of the axle load** - a 10% increase in axle load will increase pavement wear by 1.1 to the fourth power.

Allocating costs using average vehicle mass is inappropriate because virtually no vehicles travel at the class average mass. **The use of average mass and distance for six axle articulated trucks leads to major distortions in truck road access pricing.** It underestimates the cost of road damage attributable to articulated vehicles travelling at over the class mass average. Road user charges based on class mass averages discriminate against lighter, short distance vehicles both between vehicle classes and within a class of vehicles. Lighter vehicles travelling short distances subsidise heavier vehicles travelling longer distances: those vehicles in direct competition with rail.

3.7 The case for mass distance charging

Mass-distance charging for heavy articulated vehicles provides a more accurate measure of the true contribution that these vehicles should make to their total road costs. This view was supported by the Industry Commission as far back as its 1991-92 Annual Report. The Commission stated:

> "Annual fixed charges are not efficient because costs vary with the distance travelled and mass of the vehicle. The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs. Charges for heavy vehicles that reflect costs they impose are essential to ensure best use is made of the nation's road and rail infrastructure, and that industry location decisions are appropriate in terms of minimising the overall cost of economic activity. Differences between recommended charges and road-related costs are greatest for vehicles competing with rail. The (NRTC) charges, as recommended, will therefore potentially distort the long-haul freight market as rail reform takes effect..." (p197-98)

The NRTC also acknowledges that road user charges based on vehicle averages are not the most efficient charging mechanism. In its document, "Heavy Vehicle Charges : The Second Generation" - February 1995, the NRTC commented (emphasis added) :

> "All the road use data used in the charging process are averages for a vehicle class. These averages conceal differences in the use made of the road system by individual vehicles. **This is one argument for a mass-distance charge that**

> **reflects differences in the operating mass and the distances travelled by individual vehicles.**
>
> The differences between costs and charges may be accentuated if trucks that operate at masses higher than average also travel distances higher than average. Any such vehicles are also likely to be newer, with better than average fuel efficiency, so that their contribution to costs via the Road Use Charge (diesel excise) will also be lower."

The 1988 BTCE report, the 1997 ARA submission and the 1997 Allan Report all recommend that the most efficient way to rectify cost under recovery from articulated trucks is to impose a mass-distance charge on these vehicles to supplement the fuel excise and registration charges. The ARA submission noted that this would "differentiate more accurately between vehicles causing most of the road damage and will achieve full and consistent road cost recovery from long distance articulated vehicles without penalising other road users."

Other road users presently subsidise heavy long distance articulated vehicles. Such vehicles should be subject to a mass distance charge to reflect their road use costs.

3.8 Application of mass distance road user charges

A mass-distance road user charge for articulated trucks has applied in New Zealand since 1978. The charge is based on cost attributable to the various categories of vehicles and are calculated using the fourth power rule. Articulated vehicles require licences based on how far they will travel and what their maximum load will be. The licence fee depends on the axle configuration spreading the load. The result is that in New Zealand, the heavier articulated trucks are charged around 3-4 times what they are charged in Australia.

The New Zealand Ministry of Transport is currently examining future land transport pricing strategies. The strategies are examining a wide range of matters including road pricing, road maintenance, road funding, environmental impacts of road use, road congestion, private sector involvement in provision of roads and road safety. Part of the reason for examining land transport pricing options was that road user charges were last reviewed in 1984 and might now be inefficient.

Five options were developed for future land transport pricing strategies. The options were subject to public consultation.

Some of the main themes found in public submissions were:

- user pays for all road use is strongly supported
- support for congestion pricing
- the National Land Transport Strategy should be published as soon as possible and environmental issues need to be addressed without delay

The commercial options being considered, with support of the NZ business community, include:

- a time/weight/distance/location road user charging regime
- road pricing to provide a return on equity on new works
- policies to internalise (paid by the user) or influence externalities, including congestion. The options note that these policies would only be required if externalities persisted despite efficient road pricing
- a neutral road management regime, encompassing accountability and performance aspects and the pursuit of safety and environmental goals

- more involvement by the private sector in the provision, management and funding of road services
- an appropriate regulatory regime to enable competition and prevent monopolist behaviour
- transferring local authorities' and Crown road assets to commercial enterprises owned by the state and local authorities

The proposed New Zealand approach to commercialising roads is strongly supported by the ARA. A road user charging regime based on time/weight/distance/location and including congestion pricing is the most effective way to ensure competitive neutrality applies to road and rail access pricing.

For rail to fulfil its potential in the national transport network as an efficient mover of long haul freight, a more efficient system of road user charges for articulated trucks needs to be implemented without further delay, particularly with the continual increases in truck size and weight.

New Zealand has shown that sustained reform in the transport sector resulting in a more commercial approach through mass distance charging for road freight operators, has removed major distortions from the transport economy and allowed rail to increase it's market share.

Recommendations

- Rail operators, as "off road" users of diesel fuel, must be exempted from paying diesel fuel excise OR the revenue collected from this tax should either be returned to rail operators or invested in rail infrastructure.
- A mass distance charge must be introduced for articulated trucks to supplement registration fees and fuel excise charges. This will ensure that vehicle road user charges accurately match the actual road costs incurred and eliminate the present cross-subsidy of light vehicles travelling short distances subsidising heavy articulated vehicles travelling long distances.
- Road pricing options must be reviewed to determine the effectiveness of full road user charging, including congestion pricing. Road management by federal, state and local commercial enterprises also needs to be investigated.
- Dangerous goods regulations applying to rail and road must be uniform.
- Current road transport regulations must be strictly enforced by authorities.

4. Investment Strategies

4.1 National Rail Highway

Currently Australia's rail industry is struggling to rise to the challenge of delivering a 21st century service on 19th century infrastructure. The first requirement is the definition of a National Rail Highway to match the National Highway System.

In addition, the ARA is seeking funding for the two RONI's (Rails of National Importance as well as Roads of National Importance). Funding should be part of a Commonwealth integrated national land transport strategy in the same way that roads are funded, not by loans taken out by state infrastructure owners. The rail industry is not seeking preferential treatment: it seeks the same approach as that given to roads.

The Heads of Agreement agreed by the Transport Ministers in September 1997, begins the process of establishing a National Rail Highway, similar to the National Highway System. It loosely identifies the National Rail Highway as the existing interstate standard gauge system, along with routes such as those to Newcastle, Cairns and Mt Isa.

What is now required is a more strategic focus for interstate rail investment, similar to investment in the National Highway System. Responsibility for managing investment decisions should reside with the body established to coordinate access for interstate services.

The unsatisfactory condition of Australia's interstate rail network was recognised in a global survey by the London based Economist Intelligence Unit. The Unit undertakes regular surveys as part of its country forecast service. Its 1997 second quarter Business Environment Survey surveyed 60 countries on 58 indices. The extensiveness and quality of Australia's rail network was one of four areas that the survey rated Australia as only 2 out of 5, the lowest ranking Australia received for any individual indicator. The Unit also noted that the lack of transport planning and upgrading relating to Australia's rail and ports network has left Australia in a "particularly poor" position.

Despite these deficiencies in Australia's rail transport network, Australia's interstate rail operators still have a 40% market share of the total intercapital rail and road freight market, varying from around 70% of east-coast to Perth traffic to 23% of Melbourne - Sydney traffic.

4.2 Integrated Land Transport Policy

To address the need for investment in Australia's interstate mainline rail network, an integrated land transport policy needs to be developed by the Federal Government. The role of each mode and its contribution to Australia's transport needs must be properly assessed and appropriate levels of funding allocated to each mode to ensure that the nation's transport system operates as efficiently and economically as possible. The National Transport Planning Taskforce identified the need for long-term strategic assessments of Australia's transport infrastructure to ensure funds are targeted where they will produce the greatest benefits.[11]

For too long road and rail projects have been assessed on different criteria.

Analysis of road projects has included wider social cost-benefit criteria, whereas rail projects have been assessed on a narrow, commercial basis. The same evaluation criteria should apply to rail and road projects including economic, financial, social and environmental considerations rather than the narrow commercial approach that is presently applied to rail projects (ie revenue against construction costs and subsidy).

---

[11] "Building for the Job" - Volume 1, 1995

Comprehensive evaluation criteria would see some rail projects considered as road projects because of their benefits to the road network in terms of reducing congestion, pollution, road accidents etc by getting traffic (passenger or freight) off roads onto rail. In other words, the positive social benefits that are attributed to road projects are equally attributable to rail projects.

The New Zealand government has adopted this approach to transport funding.[12] In July last year, the New Zealand government established Transfund to spend money raised from road users. However, Transfund has the power to determine the most efficient way in which that money should be spent. If Transfund determines that building or upgrading a commuter rail line is more efficient than widening a freeway, then it can use motorists' money to implement that project. Similarly, it can allocate money to develop a railway line for freight purposes rather than build or upgrade a road for the purpose. Recent examples of bids for Transfund projects include double tracking an Auckland suburban rail line, upgrading of two Wellington suburban railway stations and extending the Auckland rail terminus into the city centre.[13]

Similarly, in the US, the Intermodal Surface Transportation Act (ISTEA) was introduced 5 years ago to provide an intermodal approach to transport funding and replace the previous road bias in federal transportation funding. The ISTEA directed significant federal funding away from highway projects to rail projects, primarily in urban areas, and created more flexibility in the way state and local governments could use transportation funds. Traditionally, money allocated by US state governments to road projects received an equal amount from the federal government, whereas state money allocated to public transport projects received only 10% federal assistance. The reauthorization of the ISTEA bill is presently being debated in Congress.

Sweden also has implemented intermodal transport planning. In 1988, the Swedish Parliament decided that investments in infrastructure should be made on the basis of socio-economic assessments. A parliamentary committee is preparing a transport infrastructure plan for all transport modes based on needs identified by rail and road authorities. Part of the plan involves upgrading Sweden's rail system to accommodate 25 tonne axleloads to enable it to compete with 60 tonne trucks. Sweden currently spends 2.5% of GDP on transport infrastructure.

4.3 Road and rail funding

Due to the lack of an integrated approach to transport funding in Australia, the Federal Government has spent more than $32 billion on the nation's road infrastructure since 1975, while in the same time spending only $1.6 billion on interstate mainline rail infrastructure.[14] This imbalance was repeated again in this year's Federal Budget when $1.6 billion was allocated to roads, but nothing to rail infrastructure. Of the 1997-98 road allocation, $696 million was for the National Highway System and $112 million for upgrading Roads of National Importance. This contrasts with the deferment of spending $175 million (now $250 million) over four years on mainline rail infrastructure.

The ARA realises the important economic value of the national highway system but insists that comparable investment criteria be applied to rail and road through an integrated land transport strategy that recognises the merits of each mode and funds them accordingly.

The Senate Report on the Commonwealth's Role in the Australian Rail Industry (May 1997) recognised the need for a balanced approach to transport infrastructure investment by recommending that the Federal Government develop a coordinated national transport policy that assesses rail and road projects on a social, economic, environmental and financial basis.

---

12 "Network" - September/October 1996

13 "Rails", September 1997

14 "Intercity Land Freight Transport in Eastern Australia " - 1996, Laird

The ARA welcomes the Transport Ministers' Heads of Agreement reached in Melbourne on 10 September 1997 acknowledging the need for investment in the interstate rail system. The Federal Government's commitment of $250m in investment in the mainline rail system over the next four years is recognition of the past funding neglect of the system. However, an efficient, competitive land transport system in which rail, either public or private, is competing effectively with road, requires much more investment in mainline rail infrastructure. With highway improvements between Sydney-Melbourne and Sydney-Brisbane in particular, rail will lose market share to road unless rail improvements are made. Increased road freight haulage will increase road damage, congestion, fuel use, greenhouse emissions and road accidents.

The Energy Research and Development Corporation estimated that if the Pacific Highway is upgraded as planned and there are no comparable investments to the parallel railway, then rail's modal share of the Sydney-Brisbane freight market will decline from its present 42% to 25% (based on similar experience as a result of the Hume Highway upgrading). Taking account of anticipated annual freight growth of 4% per annum, then by the year 2005, this would result in an additional 2 million tonnes of freight being moved by road per year between Sydney - Brisbane. This translates to 100,000 truck movements per annum. That is 2,000 extra trucks per week or 300 extra trucks per day travelling between Sydney and Brisbane. These extra truck movements will consume 45 million litres of fuel and cause 130,500t of additional greenhouse gases.[15] A study by Sinclair Knight Mertz for the NSW Roads and Traffic Authority in June 1997 estimated that increased truck mass limits would cause at least an additional $300 million damage to bridges in addition to the existing $700 million repair backlog.

4.4 Quality of Infrastructure

The standard gauge rail line between Melbourne and Ararat is but one example of the neglected state of Australia's interstate mainline.

The line between Melbourne and Adelaide was standardised in 1995, but the section between Melbourne and Ararat (265km via Geelong, including some new track) was never finished properly. That section of track comprises 32% of the rail distance between Melbourne and Adelaide, but is still subject to a maximum speed of 80 kph, rather than 115 kph. It has twelve lower speed restrictions ranging from 10 kph to 65 kph, including one stretch of 50 kph for 45 km.

Piles of concrete sleepers left from the One Nation project are waiting to be installed to replace wooden sleepers, but funds have not been available for their installation or other track upgrading. To install the concrete sleepers and upgrade the track to mainline standards would cost in the order of $50 million ($8 million for sleeper installation and $40 million for track upgrading).

For an additional $80 million, rail access through the Adelaide Hills between Murray Bridge and Adelaide could be significantly improved, including double stack haulage capacity (containers stacked on containers), reducing transit times by nearly an hour and saving 900,000 litres of fuel annually.[16]

These two projects could reduce rail transit times between Melbourne and Adelaide by 3 hours at a cost of $130 million. By contrast, the Federal Government is spending $138 million on road improvements to improve truck access in the Adelaide Hills which will reduce road travel time by just 10 minutes.

---

15 "Land Freight Transport Energy Evaluation" - Energy Research and Development Corporation, April 1993

16 Samron Consultants - M Michell, May 1997

The main Sydney to Melbourne corridor suffers from the 35 year old, worn out track between Melbourne and Albury. That section was identified by the Federal Bureau of Transport twenty years ago as needing significant upgrading in terms of heavier rail and concrete sleepers. Heavier rail was installed between Melbourne and Broadford (75km) two years ago, but insufficient funds were allocated to complete the task.

Another example of a beneficial rail project is between Yass and Goulburn in NSW. The Hume Highway used to parallel the railway between those cities and both traversed the Cullerin Range. $470 million has now been spent upgrading the Hume Highway to bypass those cities and the Cullerin Range. The railway still traverses the Cullerin Range, but for $95 million (ie 1/5 of the road upgrade cost) the railway line's curves and grades could be eased. This would reduce the rail distance by 11km, save 20 minutes travel time and reduce the average fuel consumption per train by 300 litres.[17]

The 1995 NTPT report identified these sorts of projects as part of at least $3 billion worth of economically justified mainline rail infrastructure projects over the next twenty years. The Melbourne-Sydney and Sydney-Brisbane corridors each warranted $1 billion worth of upgrading in terms of curve and grade easing, lengthening of crossing loops, improvements to signalling systems and general upgrading of track quality. Other investments were Melbourne-Adelaide ($500 million), Adelaide-Perth ($300 million) and Brisbane-Cairns ($400 million). Maintenance costs for those rail corridors over that time frame were estimated to be $3.5 billion with the improvements, but $4.5 billion without the improvements.

In terms of world best practice, the NTPT report ranked the two busiest intercapital links of Melbourne-Sydney and Sydney-Brisbane as grossly deficient grading them only 0.6 and 0.5 respectively. The condition of these rail corridors with excessive curves and grades and restricted clearances significantly impedes efficient and competitive rail operations by restricting train speeds, restricting trailing loads, preventing adoption of technological improvements such as double stacked containers and causing fuel consumption and equipment maintenance costs to be higher than if the NTPT recommended track improvements were made.

In particular, the NTPT report noted that the deficiencies of the Sydney-Brisbane corridor - in terms of transit times and operational constraints - were of such magnitude that the corridor may not survive as a commercial freight alternative unless improvements are implemented.

Further evidence of the need to upgrade Australia's mainline rail infrastructure is provided by private enterprise users of the network.

BHP Transport's submission to the Senate Inquiry into the Continuing Role of the Commonwealth in the Australian Rail System highlighted that rail efficiency was being significantly impaired by speed restrictions, height and trailing load restrictions and by high maintenance costs caused by generally deficient track infrastructure (BHP Submission to Senate Inquiry, January 1997).

BHP is a major user of the National Rail Corporation's interstate network, generating around 25% of the Corporation's business. At the time, BHP was concerned that the Federal Government's rail reform measures (essentially privatization of Australian National and National Rail Corporation) did not address the need to maintain and upgrade rail infrastructure "to a level which will provide the rail system with the ongoing capability to deliver quality services on a sustainable basis".

[17] "Land Freight Transport Energy Evaluation" - Energy Research and Development Corporation, April 1993

4.5 Benefits of track upgrades

Cost benefit ratios of the rail upgrades proposed in the NTPT Report were generally of the order 1.5 to 5. In other words, the economic benefits of the track upgrades far outweigh their capital costs.

The benefits of these rail upgrades to rail operators would be faster transit times, reduced fuel consumption, increased loads, increased productivity, and reduced maintenance costs of track and equipment. These increased efficiencies would generate savings in rail operating costs and increase the competitiveness of rail.

This in turn, would benefit the entire economy through reduced rail freight rates and an increased modal share of freight carried by rail with consequent savings in road construction and maintenance costs, road accidents, congestion, fuel consumption and greenhouse emissions.

The Main Line Upgrading program undertaken by Queensland Rail between Brisbane and Cairns clearly indicates the benefits of such an investment. This line had similar operating constraints to the Melbourne-Sydney-Brisbane intercapital rail lines, but was upgraded at a cost of $590 million. The upgrade involved extensive curve easing, installation of heavier rail and concrete sleepers, replacement of timber bridges and improved signalling and communication systems. The upgrade has increased locomotive and wagon productivity in the corridor by 30-40% in terms of heavier loads and longer, faster trains and decreased maintenance costs by 20-30%.

This strategic investment has contributed to a reduction in rail transit times between Melbourne and north Queensland of 22 hours and has enabled National Rail and Queensland Rail to develop a new service which is winning new traffic in that market.

Similarly, an increase in axle loads on interstate mainlines to 25 tonne would provide a 40% increase in rail productivity through more load being carried per wagon in relation to wagon weight.

The Bureau of Transport and Communications Economics[18] estimated that upgrading intercapital mainline rail infrastructure could result in a 40% modal shift of intercapital freight from road to rail and, in the Melbourne-Sydney-Brisbane corridor, generate net social benefits of $500 million by 2015 (the overall net social benefit from all the proposed upgrade projects would be $3,400 million by 2015). Transferring this amount of intercapital freight from road to rail in the Melbourne - Sydney -Brisbane corridor would save in the order of 200 million litres of fuel and 580,000 tonnes of greenhouse gases annually.[19]

Modal shift from road to rail would also reduce road trauma and its associated costs. Although the number of road fatalities involving articulated trucks has fallen since 1990, the proportion of road fatalities involving articulated trucks has changed little over that time since the overall number of road fatalities has also declined. Of total road accidents between August 1996 and July 1997, 153 involved articulated trucks resulting in 188 deaths. These were increases of 11% and 19% respectively over the previous year. Articulated trucks are involved in 9% of Australia's fatal road accidents, but 10% of road fatalities contributing $160 million to the annual road fatality bill.[20]

Further evidence of the benefits of rail over road for freight haulage is provided by the decision of the NSW Government to build a 16km rail line for coal haulage between a mine and a loading facility in the Hunter Valley. The line will replace road haulage of three million tonnes of coal annually, eliminating 150,000 truck movements per year from roads in the Hunter Valley. While

---

18 "Transport and Greenhouse" 1996

19 "Intercity Land Freight in Eastern Australia" - Laird, 1996

20 Federal Office of Road Safety - June 1997

the link will cost $30 million, the benefits to the region will outweigh this in terms of increased road safety, fewer road accidents, less road damage and production of fewer greenhouse gases.

The NTPT rail investment program would achieve much the same objectives of comparable road projects in terms of faster transit times and increased road safety, but at much less cost. The $3 billion nationwide NTPT rail investment program contrasts with the $4 billion to be spent by the Federal and NSW governments on the Pacific Highway between Sydney and Brisbane alone over the next ten years to develop the road into a multi lane freeway.

With the impending privatization of the National Rail Corporation, the Federal Government would significantly increase the value of the asset if potential owners knew they could operate their trains over modern, world class tracks rather than track that in most cases, according to the NTPT, is well below world best practice.

Recommendations

- The Federal Government must develop a national integrated land transport policy.
- Federal and state transport ministers must agree to establish the National Rail Highway, similar to the National Highway System. The National Rail Highway must comprise the existing interstate standard gauge system, linking the capital cities and their ports along with other strategic routes such as those to Newcastle, Westernport, Cairns, and Mt Isa.
- The Federal Government must accept responsibility for funding the National Rail Highway as it funds the National Highway System and Roads of National Importance.
- Federal and state governments must apply the same evaluation criteria to road and rail projects taking into account economic, financial, social and environmental considerations including greenhouse gas emissions.
- Investment decisions in the National Rail Highway must be coordinated by a single body.
- Federal and state governments establish a “Transport Fund” from which funding is allocated to rail or road projects based on comparative evaluation criteria.
- The Federal Government must review the recommendations of the National Transport Planning Taskforce and determine the economic and commercial benefits of a comprehensive mainline rail investment program.

5. Access to the Transport Network

5.1 State-based Access Agreements

Interstate rail operators must presently obtain track access agreements from the various state track regimes before they can operate trains. The track authority in NSW is the Rail Access Corporation, in South Australia it is Australian National's Track Access unit and in Victoria it is the Victorian Rail Track Corporation. In Queensland and Western Australia, access regimes exist within vertically integrated railway systems. An access regime has been established within Queensland Rail under the Queensland Competition Authority Act and an access regime is presently being developed for Westrail.

The present scenario where rail operators are forced to deal with different state track access regimes imposes an additional administrative barrier to entry onto the rail network. It should be possible for interstate rail operators to have only one point of entry for track access and to obtain one track access agreement rather than the potentially five track access agreements that must be presently obtained for a run between Brisbane and Perth.

Track access authorities are presently negotiating to achieve this requirement and to develop a streamlined interstate track access system.

5.2 A single point of entry for national track access

The Heads of Agreement reached between Australian Transport Ministers at the Rail Summit on 10 September 1997 to establish a national interstate track access regime is welcomed by the ARA.

Although this regime will initially extend from Broken Hill and Albury to Kalgoorlie, it must eventually encompass all capital cities on the interstate network.

A One Stop Shop must reduce the barriers to entry, reduce the administrative burden of our operators, provide increased competition within the overall freight task and encourage increased private investment. There have been a number of models proposed to deliver this most desirable outcome. The industry believes that with the support and encouragement of the Transport Ministers, their respective access providers will complete the negotiation process to deliver a workable single, uniform National Access Regime that properly balance the competing priorities of inter and intra state traffic.

Such a body is also necessary to coordinate mainline rail investment decisions and encourage greater private sector involvement in the rail industry.

BHP Transport's submission to the Senate Rail Inquiry in January 1997 argued that rail access charges should be set not only according to user pays principles, but also with the "objective of enhancing the ability of the rail systems to compete with other modes and capture those parts of the freight task in which it has some inherent advantages."

In a high fixed cost business like rail, for access charges to be based on user pays principles as well as promoting modal competition, track owners would need to receive an explicit subsidy to offset the high fixed costs of the rail network. Consequently, in order to promote modal competition, access prices need to be supplemented by Community Service Obligation payments in order to ensure track is able to be maintained to a satisfactory average standard. Further funding would still be required to provide sufficient funds to enhance the asset by increasing capacity, operating speed or technological sophistication.

Recommendations

- Federal and state transport ministers must establish a national track access regime that balances the needs of both intra state and inter state operators and provides a single point of entry to the interstate mainline rail network.
- The national track access regime for the interstate mainline rail network must encompass all capital cities on the interstate standard gauge network.
- Access pricing must be at a level that is affordable by rail operators and allows them to be competitive with road transport.

Harmonisation of standards

6.1 Reduce the number of incompatible systems

Establishing a national system of track access also provides the opportunity to standardise the plethora of state based regulations presently governing interstate rail operations. There are presently 22 train control systems operating on the interstate mainline network and 8 radio communication systems. Each state requires rail operator compliance with different safety and accreditation standards.

Historically states developed their own operational standards because they owned and managed all track within their borders (except for Tasmania and South Australia where their rail operations - other than in metropolitan Adelaide - were ceded to the Commonwealth in 1975). These different standards have adversely affected interstate rail operations. These regulations govern a range of rail activities ranging from complying with different safety regimes and accreditation requirements to different radio and signalling systems. The time required by rail operators to comply with these requirements must be minimised through harmonisation of regulations between states.

The Heads of Agreement reached between transport ministers at the Rail Summit to investigate the harmonisation between states of technical standards is supported by the ARA.

The ARA considers that harmonisation of regulations affecting interstate rail operations is equally as important as single management of track access to interstate rail corridors. Harmonisation must extend to items that ensure that rollingstock, communication systems and other systems and procedures can be used as widely as possible throughout Australia and that loading gauges vary as little as possible between states. As far as possible, there must be uniform rail operating standards throughout Australia.

The harmonisation of technical standards is consistent with the conditions of the Inter-governmental Agreement on Rail Safety and AS 4292. The Inter-governmental Agreement on Rail Safety came into effect on 1 July 1996 following agreement by the Commonwealth, State and Territory Ministers for Transport**.** The Agreement provides for a national approach to the regulation of rail safety by a system of safety accreditation of owners and operators. The Agreement was primarily reached because of the increasing use of publicly owned rail track by private operators under the Hilmer competition reforms and the need to accredit those operators as safe rail operators in accordance with relevant rail safety standards.

6.2 Mutual Recognition

A key element of the Inter-governmental Agreement on Rail Safety is the mutual recognition between accreditation authorities of accreditation based on Australian Rail Safety Standard AS4292. However, the rail safety regulators are not applying consistent conditions for accreditation as determined by the IGA.

Mutual recognition should enable a prospective operator of interstate rail services to only have to apply for accreditation in the state where its major operations are based. The state accreditation agency will then liaise with the accreditation agencies in other relevant states to enable mutual recognition of any accreditation the company may require. This was the principle of mutual recognition, but in practice it has been difficult to achieve to date.

The “one stop shop” approach for rail safety will have significant benefits for the operator in streamlining their accreditation process and is supported by the ARA.

Developing and implementing uniform standards is critical in eliminating inconsistencies for rail operators and in enabling a more “seamless” rail transportation system.

Recommendation

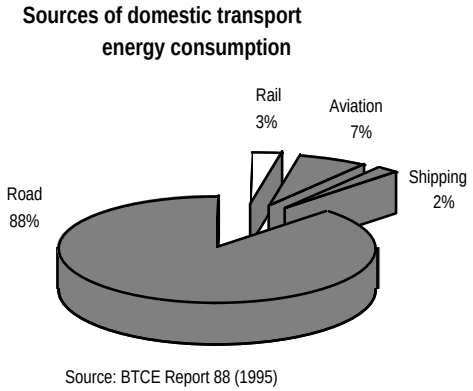
Federal and state transport ministers must cooperate to achieve the harmonisation of rail regulations, safeworking, operations and communications standards between states.

7. Rail and the Environment

7.1 Energy consumption and greenhouse gases

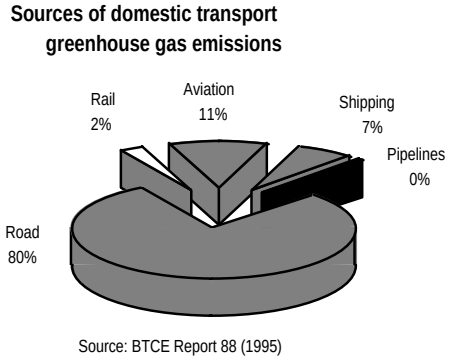
Transport contributes 25% of Australia's greenhouse gas emissions from energy use and is the second largest source of domestic greenhouse gas emissions from that source (manufacturing is largest at 38%). When considering domestic greenhouse gas emissions from all sources including land clearing and waste materials, transport's contribution to domestic greenhouse gas emissions is 12%.

Road transport consumes nearly 90% of Australia's transport energy requirements and contributes about 80% of the nation's total transport greenhouse gas emissions. By contrast, rail transport uses only 3% of transport energy requirements and contributes only 2.5% of greenhouse gas emissions.



Source: BTCE Report 88 (1995)

Rail freight transport is at least three times more energy efficient than road freight transport,[21] giving it a distinct advantage in fuel efficiency over road for long distance freight haulage. Specialised Container Transport, a private freight forwarding company operates trains 3,500 km between Melbourne and Perth. Since June 1995, the company has carried over 300,000 tonne of freight by rail, saving 15,000 semi-trailer movements, 100 million litres of fuel and 290,000 tonne of greenhouse gas emissions compared with road haulage.



Source: BTCE Report 88 (1995)

In urban areas, 99% of transport greenhouse gas emissions are attributable to road transport - primarily motor cars. Motor cars in urban areas are responsible for 50% of Australia's road transport greenhouse gas emissions and 5% of Australia's total greenhouse gas emissions.[22]

---

21 "The Growing Efficiency of Australia's Railways" - Laird, 1997

22 BTCE Report 94, 1996

Suburban rail services (tram and train) are at least twice as energy efficient as motor cars in urban areas [23].

Energy consumption and greenhouse gas emissions in Australia's urban areas would be greatly reduced through increased use of suburban rail systems as an alternative to car travel in urban areas. This is particularly true where those rail services are electrified. Such measures require integrating transport and land use planning, improving services and extending services to outer urban areas

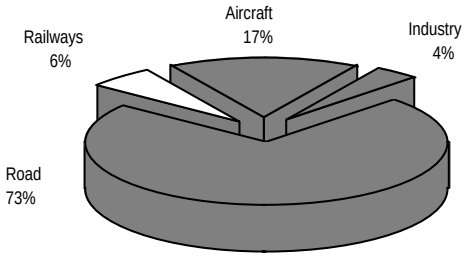
The average journey to work in Australia in 1990 was 12.6km.[24] Since most work journeys occur in peak periods, Australia's rail services kept 201.6 million cars off the roads during peak periods in 1994/95. This reduced Australia's fuel consumption by 305 million litres and reduced greenhouse gas emissions by 730,000 tonnes (using an average fuel consumption per passenger vehicle of 12 litres/100km)[25].

Motor vehicle emissions comprise carbon monoxide, which exacerbate problems for people with heart conditions; lead, which causes brain damage particularly in young children (unleaded petrol has diminished, but not removed, this problem); nitrogen oxides, which contribute to asthma; and ozone and other particulates which cause smog.

7.2 Noise

Road transport is also a significant generator of noise in urban areas.

Sources of noise in urban areas



Source: Road facts 96 (Austroads)

7.3 Externality costs

Work undertaken by the Economic Planning and Advisory Council in 1991, Paper No. 46 "Urban and Regional Trends and Issues" gives a clear indication of the costs to the community of noise, air pollution and road congestion.

This paper identified noise and air pollution costs due to road transport in Australia at around $1.4 billion per year, while urban road congestion costs were around $4 billion per year in terms of the additional fuel and labour required because road use exceeded capacity.

7.4 More freeways are not the answer to urban congestion

More freeways are not the answer to urban traffic congestion and its associated problems of pollution and noise. The solution is expanded urban rail services and other public transport services.

---

23 "The Growing Efficiency of Australian Rail Operations " - Laird, 1997

24 Indicators of Transport Efficiency in Global Cities - World Bank, 1997

25 Apelbaum Consulting Group

Private motor vehicles account for 81% of vehicle kilometres in urban areas while trucks are responsible for just 4%. Minimising car travel in urban areas would free up road space for other road users and reduce the need to build bigger roads [26].

Removal of unnecessary journeys from congested roads frees up road space for other road users without the need to spend massive amounts of tax dollars on increasing capacity of roads. Increased use of public transport also provides benefits to the riders who could typically save between $8-$15 per day in out of pocket costs (petrol and parking) compared with commuting by car.

Australian cities have the highest per capita level of road provision of any cities in the world: 8.8 metres per capita compared with US cities at 6.6 metres per capita, European cities at 2.1 metres per capita and Asian cities at 1.0 metre per capita.[27]

In Melbourne, one third of metropolitan land use is roads and car parks - a major cause of urban sprawl.[28] Minimising urban freeway construction significantly improves urban amenity by reducing traffic noise and pollution, retaining open spaces, decreasing land use transport requirements and decreasing urban sprawl and its associated resource costs.[29]

Present state government urban transport policies with their emphasis on freeways are unsustainable on an economic, environmental or equity basis: Melbourne is a typical example. According to the Economic Planning and Advisory Council (1991), increased road provision as a solution to urban congestion generates housing and other development on urban fringes. This causes urban sprawl, a reduction in the proportion of public transport journeys, longer journeys in terms of both time and distance and increased overall fuel consumption and greenhouse gas emissions (freeways decrease fuel consumption per vehicle, but increase vehicle usage and trip distance).

Increased urban road capacity increases the amount of traffic by encouraging additional road users who would alternatively have used other means of transport or rescheduled or cancelled their trips. Increased traffic causes increased congestion costs for all road users since each vehicle added to the road network reduces the space available for existing users, even with expanded road capacity.

The UK Department of Environment and Transport issued a Planning and Policy Guidance Statement in March 1994 which said, in part (Guideline 1.4):

> "The Government recognises that forecast levels of traffic growth, especially in urban areas, cannot be met in full and that new road building or the upgrading of existing highways will in some cases be environmentally unacceptable. It is already Government policy not to build new trunk or local roads simply to facilitate commuting by car into congested urban centres."[30]

A study in Zurich of freeway construction found that road building does not solve traffic problems: it only achieves short term amelioration and long term aggravation of the problem. This is because each new high capacity road releases additional traffic onto the network, with traffic generation being exacerbated by better connections between high capacity roads.[31]

---

26 Apelbaum Consulting Group 1997 - The Australian Transport Task Energy Consumed and Greenhouse Gas Emissions Vol B

27 ABS 4605/97

28 "Making Money from Better Service" - Conservation Council of Victoria, 1993

29 "Greening Melbourne with Public Transport" - Public Transport Users Association, 1991

30 "Transport Competition" - Ogden and Russell, Montech 1996

31 "Transport Competition" - Ogden and Russell, Montech 1996

Melbourne's $2,500 million City Link private toll road project and other road projects fail both the UK and Zurich tests by increasing road capacity into congested urban centres (the Melbourne CBD) and encouraging traffic generation by connecting big roads.

Part of the reason for the City Link project is to improve road access to Tullamarine Airport. Options for a heavy rail link between the airport and the city are being investigated. However, the City Link contract requires compensation to be paid to Transfield, the toll road builder, for loss of revenue if a light rail line is constructed to the airport before the road is transferred to the government, 34 years after the project's completion.

7.5 Role of government

The Federal and State Governments must take a leadership role and provide every incentive to minimise car use in urban areas, especially single occupancy car use for peak hour commuting.

Strategies could include :

- expanding and improving rail services and other public transport
- road pricing to reflect peak/off-peak use
- giving priority to public transport in traffic management schemes
- tax deductions for public transport fares
- encouraging companies to give employees the option of taking cash instead of a company car
- reducing parking requirements for developments in areas well served by public transport
- imposing an energy tax on vehicles that do not meet minimum fuel consumption requirements (eg 11 litres per 100km or 25mpg)
- adopting planning policies that concentrate urban development around transport nodes
- requiring contributions from developers to fund public transport improvements
- increasing the variable costs of motoring (primarily petrol and parking fees). The NSW Government has introduced a $400 per annum levy on inner city parking spaces in Sydney, an initiative strongly supported by the ARA. The NSW Government proposes spending the $7.8 million per year it raises from the levy on public transport infrastructure.

Examples of overseas cities that have implemented these strategies rather than expand urban road capacity include:

- Portland, Oregon: development of a light rail system and replacement of a riverside freeway with a park
- Vancouver, British Columbia: Skytrain elevated railway; new heavy rail commuter service using an existing rail line (75% of the commuter rail users were single occupancy car commuters)
- Dallas: new light rail system; heavy rail service using existing rail line
- Los Angeles: new underground rail; light rail and heavy rail services using existing rail lines (90% of users of Los Angeles' heavy rail commuter services previously commuted by car)
- St Louis: new light rail system
- Miami: new heavy rail commuter service using existing rail lines. (The service was introduced to relieve congestion while a freeway was being rebuilt, but retained and extended because of high ridership)
- San Francisco: extension of the Bay Area Rapid Transit system to new areas, including the airport
- Denver: developing a light rail system
- Salt Lake City: developing light and heavy rail systems
- Zurich: traffic calming, bus lanes, extension to light rail system
- Manchester: extension of existing light rail network

- Sheffield: construction of light rail system
- Stockholm: extension of heavy rail system
- Newcastle upon Tyne: extension of existing light rail network

All these cities have determined that rail services are more efficient than bigger road networks and that rail commuters confer benefits on road users by removing cars and decreasing road congestion.

7.6 Integrated land use and transport planning

The ARA is not arguing that rail transport - heavy or light - is the solution to all urban transport problems or that no money should be spent on urban roads. A good urban road system will always be needed.

However, in the absence of integrated land use and transport planning, more road space will be required than is necessary. Such planning places greater emphasis on urban consolidation and rail services to significantly reduce the demand for road space by reducing private car travel, This in turn reduces urban road transport congestion and pollution.

A better balance between cars, public transport, walking and cycling will lower car use and further reduce congestion.

For Australia to contain or reduce its greenhouse gas emissions, all levels of government must start implementing the recommendations of the National Greenhouse Response Strategy (endorsed by the Council of Australian Governments in 1992).

Recommendation 27 of the Strategy is to:

- integrate land use and transport plans to reduce fossil fuel dependency of urban transport;
- implement motor vehicle demand management measures; and
- ensure full consideration of the greenhouse implications of urban infrastructure development and planning decisions so that the fossil fuel dependency of urban areas is reduced.

Urban freeways lower the value of land along their routes because of the noise and pollution created and lead to dispersed, car based, development patterns.

Urban rail systems, however, generally increase land values along their routes and lead to concentrated development easily accessible by public transport, walking or bicycle. In Washington, DC, the Metrorail suburban rail system "value captured" $970 million of new development along its corridor in its first three years of operation. This returned $50 million in local tax revenue.[32]

7.7 High Speed Rail

Urban road congestion could also be addressed by building high speed rail services, rather than rural freeways, to major regional centres outside capital cities. This would reduce development pressures on those cities by bringing the regional centres within convenient commuting time of the capital cities.

For example, the Calder Highway between Melbourne and Bendigo (160 km) is being upgraded from two to four lanes at a cost of $600 million. This will reduce driving time between the two cities to 1 hour 40 minutes: a saving of 15 minutes.

The parallel railway line could be upgraded to 200kph standard for around $160 million ($110 million for track and signalling works and $50 million for two train sets) and reduce rail travel time between the two cities to 1 hour: a saving of 45 minutes.

---

[32] "Winning Back the Cities" - Australian Consumers Association, 1992

Similarly, the proposed 350 kph high speed rail link between Sydney and Canberra will make Canberra and Goulburn outer suburbs of Sydney. The link will also decrease aeroplane traffic between those Canberra and Sydney by 60 planes per day, reducing greenhouse gas emissions and fuel use attributable to aircraft, as well as reducing pressure to construct a second Sydney airport.

7.8 Rail and road costs

Short and long distance commuter rail services generally use existing high capacity rail corridors rather than having to build new tracks. This applies to either expanded or new services. Where new track is required, rail is still cheaper and uses less space than road. In Melbourne's eastern suburbs, a 10km four lane freeway extension between Doncaster and Ringwood is costing $450 million. A 15km rail line between Collingwood and Doncaster with an improved Ringwood railway line, would have nearly halved the cost at $250 million.

In the US, the cost of providing a commuter rail service from northern Virginia to Washington was compared with the cost of highway upgrading. The study concluded that for an equivalent passenger task, the rail service will cost $284 million less over the next 20 years in construction, maintenance and operating costs.

Outside urban areas, a modern single track railway costs $700,000 per kilometre and requires a land reservation 10 metres wide compared with the construction cost of a 2 lane highway of $2 million per kilometre with a land reservation 30 metres wide. A double track railway costs $1.3 million per kilometre and requires a 15 metre wide reservation whereas a four lane freeway costs between $4-5 million per kilometre and requires a land reservation 100 metres wide. Adding two extra lanes to a four lane freeway costs at least $3.7 million per kilometre.[33]

Maintenance costs for a railway line are approximately $3,000 per kilometre per year compared to costs of $9,000 per kilometre per year for a two lane road. [34]

7.9 Urban Transport Investment Strategies

One of the biggest challenges in the provision of urban infrastructure is the "user pays" concept. Governments are grappling with the issue of essential/non-essential infrastructure and who should pay for what. The loser in this argument has been fixed rail public transport, particularly the extension of suburban rail services to new areas.

Government accounting generally favours short-term road benefits over long-term rail benefits. Rail projects have been assessed on a narrow cost/revenue basis, while road projects have been evaluated according to broader social cost- benefit criteria. Government departments responsible for the planning and management of urban regions must evaluate provision of rail and road infrastructure by the same criteria taking into account all social, economic and environmental considerations.

This assessment must consider the long-term greenhouse gas implications of development arising from different forms of transport infrastructure (eg low density urban sprawl based around a freeway or higher density development based around a railway).

7.10 Accident costs

Road crashes account for over 90% of the total cost of transport-related accidents in Australia. By contrast, the cost of rail accidents in Australia is only $69 million per year and accounts for just over 1% of transport related accident costs in Australia.

---

33 BTCE Working Paper 14.5, January 1995

34 "The Cost of Maintaining Australia's National Highway System " - BTCE, 1992

The nation's annual road accident bill totals $6,100 million for injuries and fatalities. Fatalities account for approximately $1,600 million of this bill.

Between August 1996 and July 1997 there were 1699 fatal road accidents resulting in 1881 road deaths.

1993 Accident costs ($m)

MODE	ROAD	RAIL	AIR	SEA
Loss of earnings	829	24	30	25
Family & community	588	12	16	14
Property damage	1868	22	16	157
Insurance	571	n/a	7	57
Pain and suffering	1463	6	4	58
Other	816	5	2	5
Total	**6135**	**69**	**75**	**316**

Source - ABS 4605/97

Recommendation

- Urban road and rail projects must be evaluated according to the same criteria taking into account social, economic, environmental and financial considerations
- Federal and state governments must develop integrated land use and transport planning policies in order to minimise road space, fuel use, greenhouse gas emissions, noise, congestion and accidents attributable to urban road transport
- Federal and state governments must take responsibility for funding extensions to urban and long distance commuter rail public transport systems
- Federal and state governments should evaluate the economic benefits of high speed rail links to regional centres outside urban areas
- Federal and state governments must take the lead in implementing motor vehicle demand management measures
- Urban infrastructure development and planning must ensure full consideration of greenhouse implications so that the fossil fuel dependency of urban areas is reduced

8. Rail Research and Advisory Body

The ARA strongly supports the establishment of an independent, non-government research and advisory body to develop a realistic strategic plan to deliver sustainable improvement to enable rail infrastructure to compete into the 21st century. Such a body could be called **"AustRail".**

The principal tasks of "AustRail" would be to:

- identify the Rails of National Importance and research impediments to the productive delivery of rail transport in Australia
- review the 1994 National Transport Planning Taskforce recommended rail projects
- assess the economic benefit of mainline rail upgrades and recommend indicators for adoption by the infrastructure owners covering system performance. These would include:
  - transit times between all major terminals to reflect customer expectations
  - increased uniform system-wide axle loads
  - increased system-wide track speeds
- recommend standards for the harmonisation of safeworking, operations and communications systems for the predominantly state-based rail systems
- recommend possible new routes that will enhance national economic development
- recommend tasks and priorities for infrastructure investment to optimise the benefit from the $250 million announced at the Rail Summit
- examine and recommend action to resolve the lack of competitive neutrality between rail and road

"AustRail" would undertake projects in consultation with rail users and infrastructure owners and report its recommendations to the Australian Transport Council.

The ARA recommends that this body be given funding of $5-10 million from the $250 million announced at the Rail Summit to develop a set of priorities that will guide the allocation of those funds into areas of maximum benefit. The body would also provide guidance for private sector investment.

It is proposed that the rail industry join with government to provide the appropriate intellectual and analytical resources to perform this critical task over a period of 12-18 months.

Longer term research tasks include:

- undertake a contemporary international bench marking study of Australian railways
- reviewing the 1988 Bureau of Transport and Communications Economics study of road user cost recovery
- examine the economic impact on rail of regulatory differences between rail and road
- other projects identified by Ministers in the Australian Transport Council or rail operators

Recommendation

The federal and state governments establish and fund an independent, non-government research and advisory body "AustRail" to investigate and make recommendations on economic and regulatory matters affecting the rail industry

9. Conclusions

Rail transport plays a major role in moving the nation's freight by moving over half of the combined rail and road non-urban freight task. Rail transport is also an integral part of Australia's major cities by providing an efficient mass transit alternative to cars. In doing so, rail transport contributes significantly to reducing the impact of road transport on the community in terms of road damage, accident costs, pollution, greenhouse gas emissions, noise and congestion.

However, much more could be achieved by Australia's railways if State and Federal Governments implemented competitive neutrality policies to correct the present regulatory and financial imbalance between rail and road transport.

Rail freight transport is subject to a vastly more complex regulatory regime than road freight operators. Access to the interstate rail network typically requires negotiating up to five access agreements and there are different rail operating and safety standards applying in each state.

Rail is also at a disadvantage financially with road. Rail operators pay diesel fuel excise, including a road user component, even though they are "off road" users. This is a discriminatory tax against rail. Government funding for mainline rail infrastructure has been significantly less than for comparable interstate highway improvements. Road cost recovery from heavy articulated trucks - rail's principal competitor - is severely deficient.

Millions are being spent on urban road networks while urban rail systems are being subject to rigorous cost cutting policies and lack of investment.

All these factors combine to tilt the transport playing field strongly in favour of road.

The Australasian Railway Association recommends that State and Federal Governments implement the following major measures to redress these imbalances:

- Federal and State Governments develop integrated land transport planning policies
- Federal and State transport Ministers establish a National Rail Highway and fund as Rails of National Importance
- Federal and State Governments evaluate rail and road projects on the same criteria taking into account financial, economic, social and environmental considerations including greenhouse emissions
- The Federal Government establish and fund an independent rail research and advisory body "AustRail"
- Rail operators be eligible for the diesel fuel excise rebate OR the excise collected be returned to rail infrastructure projects or rail operators
- Federal and State Governments establish "Transport Funds" from which funds for rail or road projects are allocated
- The Federal Government develop a comprehensive mainline rail investment program
- Establish a single access regime to manage interstate track access
- Federal and state transport ministers must cooperate to achieve the harmonisation of rail regulations, safeworking, operations and communications standards between states.
- A mass-distance charge be applied to articulated trucks to ensure that road user charges match road costs