



Bureau of Transport and Communications Economics

WORKING PAPER 34

TAXES AND CHARGES IN
AUSTRALIAN TRANSPORT:
A TRANSMODAL OVERVIEW

The Bureau of Transport and Communications Economics undertakes applied economic research relevant to the portfolios of Transport and Regional Development, and Communications and the Arts. This research contributes to an improved understanding of the factors influencing the efficiency and growth of these sectors and the development of effective policies.

The BTCE publishes the results of its research through the Australian Government Publishing Service. A list of recent publications appears on the inside back cover of this publication.

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PREFACE

Public debate on whether the road or the rail sector is relatively more disadvantaged in terms of competition tends naturally to be driven by the specific interests of the protagonists.

The focus of the debate reflects changing issues as new, alleged discrepancies are discovered. It has therefore ranged from taxes paid, the extent of charges levied, and the degree of direct or indirect financial assistance provided by governments, and the fairness of increasing mass limits for heavy road vehicles. It is thus not surprising that the debate continues, and that it is not particularly fruitful or illuminating.

The BTCE has adopted a different approach.

Given the intensity of the debate and the fact that it has continued for so long, it was surprising that little or no systematic information exists on taxes and charges in the transport sector. The BTCE's first step was therefore to compile the lists presented in the appendixes (to which many public and private organisations and individuals generously contributed). Recognising that all four modes (it was not possible to include pipelines) are substitutes to some extent, the list is not limited to road and rail.

Most importantly, the summary matrix in table 1 (liftout) and the underlying analytical approach reflect marginal cost principles in the hope that this methodology will assist objective comparisons between modes, as well as the formulation of policy options in any consideration of general taxation reform.

The BTCE team included Joe Motha (classification of taxes and charges and overview), Pat McNamara (identification of taxes and charges), and Leo Dobes (conceptual direction, drafting and coordination). Valuable assistance was also provided by Dr David Luskin, Edwina Heyhoe, Brett Evill, and Sandra Collett.

Dr Leo Dobes
Research Manager

Bureau of Transport and Communications Economics
Canberra
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AN INVITATION TO OUR READERS

The BTCE welcomes comment on all of its publications. But feedback is particularly valuable in the case of Working Papers, such as this one. Working Papers are used where research is not yet complete and the research team sees benefit in exposing its methodology or results to a wider audience.

Our experience to date indicates that knowledge of taxes and charges in the transport sector is fragmented, even within individual agencies. The large range of data sources used so far makes possible the existence of factual errors or analytical misinterpretation. Any assistance would therefore be welcome, in order to assist all stakeholders to gain a clear and accurate picture of the sector.

We encourage you to contact one of the research team with any comments by 27 November 1997:

Leo Dobes

ph. (02) 6274 6806

fax (02) 6274 7170

LDobes@email.dot.gov.au

Joe Motha

(02) 6274 6828

(02) 6274 7170

JMotha@email.dot.gov.au

Pat McNamara

(02) 6274 6873

(02) 6274 7170

PMcNamar@email.dot.gov.au

Additional copies available from:

The Manager

BTCE Information Services

phone: (02) 6274 6846

email: btce@dot.gov.au

ANALYTICAL OVERVIEW

As taxes and charges influence resource allocation, a regime of taxes and charges that distorts modal choice may result in excessive or economically inefficient investment in one mode at the expense of another.

There is a long-standing debate in Australia about the relative competitive advantages available to road and rail transport. Taxes and charges are central to this debate. Examples often cited relate to infrastructure usage and the application of fuel excise revenue. Issues concerning subsidies and regulations also enter the debate from time to time.

The BTCE has taken a wider view than that encompassed by the conventional debate because road and rail are not the only modes of transport. There is generally some degree of substitutability between all transport modes. In some cases, air or sea transport can substitute for road or rail. A proper understanding of relative modal advantages and disadvantages therefore requires a broader, transmodal perspective.

A major obstacle to any analysis is the lack of coherent and comprehensive information on taxes, subsidies, charges and regulations across modes. The BTCE has therefore taken the essential first step of cataloguing taxes and charges in all modes except pipelines, with an emphasis on freight transport. Time constraints did not permit the inclusion of subsidies and regulations. Table 1 (liftout) summarises detailed information in appendixes II to VIII.

The BTCE recognises that its list of taxes and charges may not be exhaustive, and that it may contain some errors. Its findings have therefore been published as a Working Paper rather than as a report. To facilitate further research by the BTCE and others, the BTCE would be grateful for corrections or information on any omissions or errors.

BOX 1 GENERAL PRINCIPLES OF TAXATION

Equity, efficiency, and simplicity are the traditional and fundamental criteria against which tax systems are normally judged. These criteria will in practice often conflict with each other, forcing the adoption of compromises. Achievement of greater social equity, for example, may reduce efficiency.

Horizontal equity means that economic agents (or people) in similar economic circumstances should be treated similarly. Vertical equity requires that economic agents in different economic circumstances be treated differently, but with those better off bearing a greater share of the tax burden. While the principles of equity may appear unexceptionable in this form, they are, in terms of economic circumstances and treatment, difficult concepts to apply in practice. For example, is the concept of taxation equity to be applied to individual persons, firms, households or industries?

Efficiency (or the need for taxes to be neutral in their effect on decisions to work, save and invest) is directly affected by taxation. In general, adverse effects on efficiency are harder to avoid as the total level of taxation increases. Inefficiency may be reduced when taxes are applied to goods and services for which demand is relatively inelastic. It is also lower the more comprehensive the tax system. However, economic efficiency is often not the only social goal. For example, an energy tax may cause inefficiencies by changing behaviour in regard to energy use, but may be regarded as necessary to conserve energy. As most taxes cause some change in behaviour by those affected, one of the goals of efficient taxation is to minimise distortions in behaviour.

Complexity and lack of transparency in taxation systems impose compliance costs such as excessive record keeping, create uncertainty, and may result in unproductive litigation. As a general rule, simplicity is to be preferred.

Application of these general principles to the transport sector is not straightforward because they are intended to apply to the economy as a whole, not selectively to specific sectors. Further, excise on fuel is virtually the only major transport-specific tax. Most other imposts are charges, although the distinction is not ultimately relevant to the day to day behaviour of the provider or user of the transport service.

THE CENTRAL ISSUE

Abstracting from the detail of the public debate, the central issue is whether the imposition across four transport modes of taxes or charges creates undesirable distortions in their relative competitive position. Answering this question requires examination of two major aspects:

- are the taxes and charges economically rational?; and
- are the underlying principles of each tax and charge applied on a consistent basis as far as practicable across modes?

THE VARIABILITY IN COST APPROACH

Fragmentation and incompleteness are terms that describe well the current system of taxes and charges in the transport sector. While lobby groups for different modes validly argue their cases to their own best advantage, there is in fact no single correct analytical framework for comparing modes.

Representative routes

One option for comparing modes is to select a 'representative' route. Modes can then be compared on the basis of the aggregate value of taxes and charges imposed, or by the total social cost involved in moving a typical passenger or load. However, this approach suffers from a number of major drawbacks:

- Some cargo or passengers are suited more to one mode than to another, so that comparisons are often meaningless. For example, a load of iron ore would be shipped more efficiently by sea or rail, and a long-distance business passenger would usually prefer to travel by air.
- There is an infinite number of possible 'representative' routes. Choice of any specific route predetermines the answer to some extent.
- For valid transmodal comparisons, the chosen route should be served by all four modes. Exclusively inland routes (Wagga Wagga to Moree, for example) would exclude shipping.
- In practice, few transport movements between a given origin and destination involve only one mode. For example, rail freight is normally delivered to the railhead by road vehicles or ships. Straightforward comparisons between single modes are therefore unrealistic, particularly in an era of increasingly integrated logistics.

BOX 2 TAXES AND CHARGES: SOME PRINCIPLES FOR THE TRANSPORT SECTOR

Rationality requires that taxes and charges be applied on the basis of economic efficiency.

- Charges should reflect the additional social opportunity cost of resource use for each service when the costs and beneficiaries can be sensibly identified. Failure to charge according to this principle risks cross-subsidisation between transport services and a consequent misallocation of resources.
- Negative externalities such as noise or pollution should be reduced to optimal levels by taxes levied to reflect (public) costs to society.
- Taxation of intermediate inputs should be avoided. While petrol for use in passenger vehicles is not generally considered to be an intermediate input, diesel for freight or farm vehicles would be. But this principle is not fully consistent with the imposition of fuel excise to raise revenue, and differential application of fuel taxes would reduce the simplicity of the system.

Transmodal consistency requires that the application of rational taxation and charging principles be applied equally as far as practicable to all modes of transport. If the community decides to tax negative externalities, then the tax should be applied on the same basis in each mode. If noise is taxed at \$10 per decibel above some specified nuisance level, then it should be applied equally, although the total collected will not be the same for each mode.

Transparency requires that potential users of infrastructure or services have sufficient information to understand the basis on which a tax or charge is levied, and to ascertain what they are paying before they use services. In general, simple taxing and charging systems are preferred to those that are complex.

A *holistic perspective* is required, because the transport sector cannot be isolated from the rest of the economy for taxation purposes. Despite the economic distortions involved in levying excise on fuel, tobacco and alcohol, for example, it is a relatively efficient revenue-raising approach because of the low elasticities of demand involved. By analogy, subsidies (negative taxes) to the transport sector can also generate distortions elsewhere in the economy.

Equity is best judged from the perspective of the provider of transport services. Taxes and charges should be levied on operators on the basis of identical principles. Industry-wide comparisons (such as total taxes and charges paid by road or rail) will yield few, if any, insights because the different structures and functions of each mode mean that differences are both inevitable and rational. Income tax, rather than differentials in taxes or charges in the transport sector, should be used to ensure equity or access.

Comparisons of modal totals

Public debate between various lobby groups and industry bodies has tended to rely on comparisons of the overall 'burden' carried by each mode. However, there is no logical reason why the total amount of revenue collected from taxes or charges should be equal for different modes of transport.

Efficient pricing of transport infrastructure is based largely on the principle that the cost to society of each trip should be borne by the trip maker. It takes as a

starting point the perspective that other objectives such as equity can be better achieved by separate, more direct policies such as income taxation.

Charges will be influenced by many different factors, including the level of demand, quality of service, availability and frequency of service, and type of goods carried. There is thus no reason to suppose that charges for each mode should be either equal on a per unit basis, or add up to the same amount.

Taxes can be levied to redress negative externalities such as congestion. Such (Pigovian) taxes face the producer of the externality with the cost imposed on others to encourage reduction to socially optimal levels. Optimal taxes are therefore likely to vary in total dollar value between different transport modes, depending on the extent of the cost imposed on society by specific externalities.

Taxes also need to be seen in a general economic context; an industry or modal perspective is inadequate. It may be efficient from a macroeconomic perspective, for instance, for revenue-raising taxes to be levied primarily on goods with low elasticities of demand. Fuel, alcohol and tobacco are the classic examples.

Modes using more of the good (for example, diesel) which is subject to excise will naturally pay more excise in total. Except by chance, any detailed quantitative calculation of the total dollar value of taxes and charges applied to the various transport modes will result in different totals for each. This is true either under the current system, or under a more rational structure of taxes and charges. It is difficult, therefore, to discern a good reason for undertaking the calculations in the first place. If the rationale is to compare or explain differences in treatment, a more direct approach would be to examine the taxes and charges themselves.

Variability in cost

Ultimately, individual taxes and charges are most relevant at the operational level: that of the providers and users of transport services. The BTCE therefore classified taxes and charges on the basis of variability in cost and usage from this perspective.

BOX 3 SETTING TAXES AND CHARGES

Taxes can be levied by governments either to raise general revenue or to correct externalities (boxes 1 and 2).

The economist Pigou was the first to suggest that polluters should be taxed for environmental damage caused by them. Such 'Pigovian' taxes provide an incentive to reduce emissions to socially optimal levels, but are not intended to eliminate them entirely. But setting optimal taxes is difficult because of uncertainties in estimating actual costs to society caused by each source of pollution.

In contrast to taxes, charges are essentially imposed to recover the opportunity costs of the resources used to provide a transport service such as a rail journey.

Pricing on the basis of *short-run marginal cost* generally ensures economic efficiency. The marginal cost of a journey includes only those costs that would have been avoided if the journey had not been made. However, pricing on the basis of short run marginal cost may result in the under recovery of total costs when fixed costs are high, or in operations having significant economies of scale (decreasing costs). Where limited capacity causes congestion, short-run marginal (social) costs rise. Peak period travellers or cargo should therefore pay more than off-peak ones.

The principle of the 'second best' suggests that marginal cost pricing in one sector will lead to an overall improvement in economic efficiency only if marginal cost pricing exists in other sectors. For example, if rail freight transport is not subject to marginal cost pricing, then it may not be efficient to impose it on road transport.

The basic principle underlying *Ramsey pricing* is that prices are marked up above marginal cost in inverse proportion to the elasticity of demand. That is, prices are increased most where elasticities of demand are relatively low (inelastic), and markups are lower where quantities demanded are most sensitive to price changes. For example, governments impose higher taxes on relatively inelastic items such as beer, fuel or tobacco.

Multi-part pricing schemes also seek to combine the principle of pricing on the basis of marginal cost while recovering total costs. Two-part pricing is the simplest case: consumers pay a fixed 'access' or 'entry' fee before being able to purchase the commodity, and also pay the marginal cost of the quantity consumed. To ensure that suppliers' total costs are recovered, access fees are set on the basis of total fixed cost divided by the expected number of consumers. An everyday analogy is a golf club that charges a fixed membership fee as well as green fees (which may vary by time of week or day) for each game.

In table 1, taxes and charges are classified to reflect variation according to degree of usage. For example, the more vehicles used by an operator, the greater the payment for vehicle registration charges. Similarly, charges that actually vary with the degree of usage of infrastructure are shown in the top row.

An alternative but equivalent perspective is that of 'avoidability'. If an operator did not make a journey, social costs for infrastructure usage, fuel, operations, and externalities would be avoided, so no tax or charge should be levied.

Vehicle taxes or charges would still be imposed. In the long(er) run, if the operator reduced the size of the vehicle fleet, these charges or taxes would also be reduced.

The ‘variability in cost’ approach is logical from the point of view of economic analysis because it is broadly consistent with the marginal cost principle on which charges (and some taxes) should ideally be applied.

Many publications focus on the legal distinction between taxes and charges in discussing the issue of relative advantage. From the perspective of the provider or user of the service, the distinction is largely irrelevant, as is the issue of hypothecation. All that matters is the effect on relative prices. From an operational perspective, it is the price paid (including taxes and charges) for a given level of service that is important. Where taxes and charges (and hence relative prices) are irrational, or are inconsistent between modes, distortions in choice will occur.

TRANSMODAL CONSISTENCY: THE BIG PICTURE

Table 2 presents a highly aggregated picture of the information in table 1 (liftout). Taxes and charges are grouped into five broad categories: infrastructure use, fuel, vehicle, operations, and externalities. The shaded boxes in the table indicate that taxes and charges exist for a particular category and mode. Blanks signify the absence of any significant burden of taxes or charges. The absence of imposts on the use of road infrastructure and on externalities in the road and rail modes is immediately apparent.

But the ‘big picture’ changes significantly when viewed from the perspective of table 3, which presents a more detailed view of taxes and charges.

Considerable caution is thus required in interpreting tables 2 and 3.

TABLE 2 AUSTRALIAN DOMESTIC TAXES AND CHARGES: THE BIG PICTURE

LEVIED ON:	ROAD	RAIL	AIR	SEA
Use of infrastructure				
Fuel				
Vehicle				
Operations				
Externalities				

Source BTCE.

A shaded area means only that some tax or charge exists for that particular category. It does not necessarily mean that the tax or charge is comprehensive, appropriate, rational, or set at an optimal level. For example, table 2 highlights an absence of charges for use of road infrastructure. It also shows a lack of imposts for externalities (noise, pollution and congestion) in either road or rail transport.

But this highly summarised perspective illustrates the dangers of applying judgements based on generalised, broad analyses. Heavy vehicles pay fixed annual charges that are intended as a proxy for damage to roads. Because these charges do not vary with actual road usage, they are not an efficient means of encouraging optimal use of roads. But, while it is true that road users are not directly faced with the marginal cost of using infrastructure (tollroads excepted), it does not necessarily follow that rail or ship users bear the full marginal economic costs either.

Moreover, tables 1, 2 and 3 do not include explicit or hidden subsidies or regulations, further complicating any transmodal comparisons. Regulations are sometimes used as substitutes for taxes or charges. For example, noise regulations limit truck movements in urban areas at night. Even though there is no explicit tax or charge, economic costs are still incurred by operators and users of truck freight services. And although aviation noise charges exist, they are applicable only to Sydney and Cairns airports.

TABLE 3 AUSTRALIAN DOMESTIC TAXES AND CHARGES: A MORE DETAILED VIEW

LEVIED ON:	ROAD	RAIL	AIR	SEA
USE OF INFRASTRUCTURE				
FUEL				
VEHICLE				
Registration, regulatory, access & other charges				
Sales tax				
Import duty				
Vehicle transfer fee				
OPERATIONS				
Payroll tax				
Company tax				
Vehicle operator (licence fees etc)				
Meteorology				
Safety				
Other				
EXTERNALITIES				
Noise				
Pollution				
Congestion				

Note Shaded boxes indicate that taxes or charges exist. Blanks indicate the absence of significant taxes or charges.

Source BTCE.

Even at a less aggregated level (as in table 3 or table 1), comparisons are often meaningless. For example, can registration charges for trucks and ships be compared? Should they be equal in dollar amounts per vehicle, be based on earning potential, or levied on physical freight carrying capacity?

The major conclusion to be drawn is that making broad, aggregated comparisons across modes is an essentially futile exercise. Given the lack of a meaningful yardstick for comparisons, it is more appropriate to establish a defensible rationale for taxes and charges *within* each mode, and to ensure that the underlying principles are applied consistently across modes.

RATIONALITY OF APPLICATION

Application of taxes and charges on an economically rational basis would encourage increased efficiency in the use of resources. In theory, if taxes and charges are rationally determined, then their application across all modes will also be consistent in principle.

Infrastructure use

Road

Efficient pricing of road usage is based largely on the principle that the cost to society of each road trip should be borne by the trip-maker. This public cost includes both 'wear and tear' imposed on the road pavement each time it is used, as well as the costs imposed by externalities.

Although cars account for a high proportion of vehicle-kilometres travelled in Australia, their contribution to pavement damage is negligible compared to that of trucks. The degree of pavement damage caused by a vehicle's load bearing axle increases very steeply with axle load. It is generally portrayed as being approximately proportional to the fourth power of the ratio of the actual axle load to the 8.2 tonne standard axle (the so-called fourth power law).

Charges for road damage should therefore be based primarily on vehicle weight, distance travelled, number of axles and road quality (pavement thickness and strength). While it may not currently be practical to charge for road usage on the basis of road quality, recent technological advances already offer considerable scope in this direction.

In table 1 road users are conspicuous in not bearing charges for the use of infrastructure, other than some toll roads in two states. Registration charges do apply to heavy vehicles, but these are classified under 'Vehicle' in table 1 because they are only fixed, proxy charges. Current charges for heavy vehicles do not vary with actual usage of roads.

The NRTC has legislative authority to determine heavy vehicle charges to improve transport efficiency, but it has been constrained to considering only five charging mechanisms of the many that are available (NRTC 1992, p. 3). In setting initial charges, the NRTC recognised that its charging system was an improvement over previous arrangements, but that further improvements could be made (NRTC 1992, attachment A, p. 3). The system of heavy vehicle registration charges essentially distributes total road expenditure among different heavy vehicle classes according to average mass and average distance travelled, using a complicated cost allocation procedure.

The NRTC concedes that its Road Use Charge has little or no effect on the decision to undertake an additional (marginal) transport operation:

The Road Use Charge has no effect on the amount of diesel fuel excise paid by transport operators nor on the level of road funding. Its level therefore has little or no impact on the charges paid and consequently little impact on providers and consumers of transport service. Impacts may therefore be considered to be confined to the levels of fixed charges proposed (NRTC 1992, attachment A, p. 4).

Payment of an annual registration fee means that average costs will decline with increased usage. Users may thus have a tendency at the margin to increase the intensity of vehicle usage to compensate for the high annual charge and thereby reduce average costs.

Because NRTC charges are based on averages, they may introduce inequities. For example, charges based on an average annual distance travelled by a specific vehicle type will disadvantage single owner operators if they cannot operate their vehicles as intensively or flexibly as fleet owners. In order to maximise efficient use of the road network, users should ideally be required to pay the actual marginal costs of road use. Because fuel consumption and vehicle wear and tear is higher on rougher roads (BTCE 1997a), road users using poorer quality roads will also incur higher operating costs than the average road user.

Variations in annual distances travelled within a vehicle class mean that there is some over-charging of heavy vehicles travelling shorter annual distances at the expense of those travelling longer distances. The calculation of charges also incorporates an allowance for distance travelled by different axle loads. In these calculations, the use of average masses of vehicles in each class means that there will be under-recovery of pavement damage costs for vehicles which are over the average weight at the expense of those below the average. The use of average masses and distances travelled thus create distortions both within and between vehicle classes.

In general, the NRTC charges are not true mass distance charges in the sense that individual vehicles are charged according to their masses and actual distances travelled. However, an exception is the case of the permit fee for overweight and over-dimension vehicles which undertake trips with indivisible

loads. In these cases, charges are calculated using a unit cost rate of 4 cents per equivalent standard axle (ESA)¹-kilometre. Other costs incurred (such as bridge, administration and operational costs) are also recovered.

The road transport registration charges determined by the NRTC are thus more accurately described as charges on ownership of a vehicle type.

Possibilities for a more rational and low cost charging system include the use of hubometers (sealed-hub odometers) as used in New Zealand and certain Scandinavian countries, although there would be some administrative and enforcement costs. The weight-distance tax in New Zealand requires all diesel vehicle owners to buy a licence (issued in multiples of 1000 kilometres). The tax rates applicable to these licences are graduated according to axle configuration and gross vehicle weight. Operators of vehicles over 3.5 tonnes gross loaded weight pay for weight-distance licences on the basis of actual distances recorded by sealed-hub odometers.

Rail

Wear and tear on rail infrastructure is also related to the type of track, train weight and distance travelled. Charges for use of rail infrastructure (currently Australian National and NSW Rail Access Corporation only) are based on a fixed charge depending on the type of train, as well as a variable charge based on gross tonne-kilometres.

Air

An airport runway pavement is constructed on principles similar to those applying to road pavements. Direct costs of runway use are mainly related to wear and tear. Apart from weather and temperature, airport pavement performance is influenced by aircraft-specific factors such as wheel loads, impact on landing, jet blast, heat, fuel spillage and number of landings. Landing gear design can mitigate the impact of heavier aircraft on the runway. In theory, charges for runway use (alone) should therefore be related to aircraft weight and landing, specific characteristics (jet, turboprop, etc) and frequency of use.

FAC charges currently include a charge based on maximum take-off weight (MTOW) per aircraft landing, and additional charges for terminal use and for security. (Maximum take-off and landing weights are maximum legal weight limits, with actual take-off and landing weights likely to be less than the legal maxima). Although MTOW is commonly used internationally, maximum landing weight is used in a few countries including the United States. The difference between take-off and landing weight is accounted for by fuel.

¹ An equivalent standard axle is defined as the effect on a pavement of a pass by a standard reference axle, which is a dual-tired axle with a load of 8.2 tonnes.

Sea

Most ship-related charges such as conservancy, tonnage, towage and wharfage are imposed on the basis of each port call and are therefore classified in table 1 as charges related to infrastructure use.

However, the Marine Navigation Levy (which covers the capital and operating costs of marine navigation networks) and the Marine Navigation (Regulatory Functions) levy which meets the cost of safety and regulatory activities have been classified as 'registration, regulatory, access and other' charges in table 1 because they are paid only once in a three-month period irrespective of the number of voyages. Repeated usage of marine facilities during the three-month period for which the two levies are paid does not attract additional charges.

Charges in the maritime sector are highly differentiated by purpose, so there are comparatively many of them. Although they are not all economically rational, they reflect the principle of fee for service better than some other modes. On the other hand, the large number of charges reduces the transparency and administrative simplicity of the charging regime, thus imposing compliance costs on operators.

Fuel excise

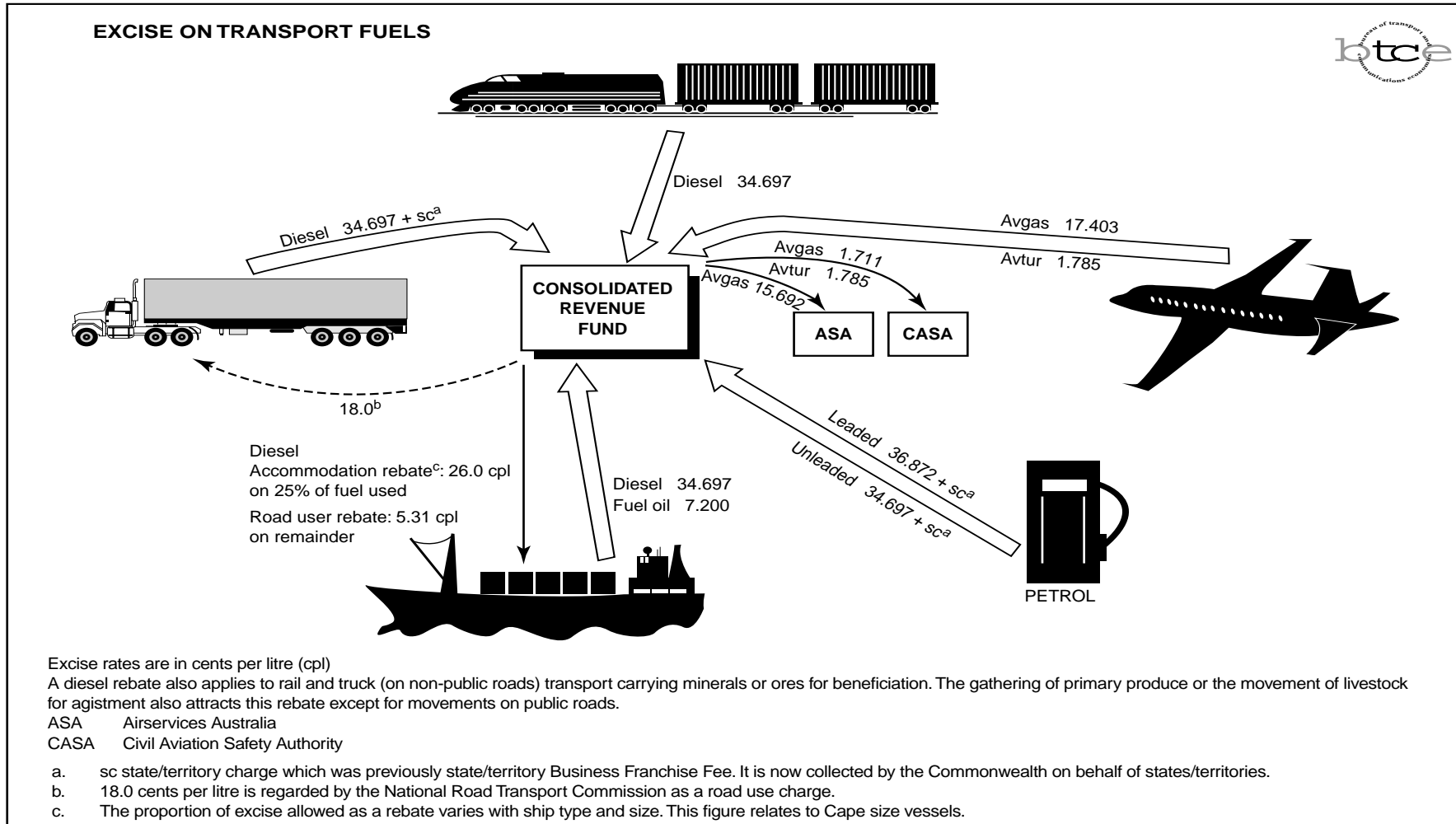
With the exception of liquefied petroleum gas, the Commonwealth levies excise on most petroleum fuels. A simplified exposition is provided in figure 1. It should be noted that excise is levied on specific fuels; not by mode.

Following the High Court judgement in *Ha and Lim v New South Wales* and *Walter Hammond and Associates Pty Ltd v New South Wales* delivered on 5 August 1997, the Commonwealth has, since 7 August 1997, collected 8.1 cents per litre in additional excise on petrol and diesel. The additional excise is collected on behalf of the states and territories, who in turn make rebates or refunds to producers and wholesalers in order to leave them in the same position as they were under the previous system of state-imposed business franchise fees.

Queensland returns the whole of the 8.1 cents per litre to producers and wholesalers because it previously did not levy fuel franchise fees. In other jurisdictions, the full 8.1 cents per is fully refunded only in respect of diesel sold for off-road use. For fuel sold to road users, the other jurisdictions rebate a proportion of the 8.1 cents such that the increase in excise equals the fuel franchise fee it replaced. Excise collected at effectively differential rates on behalf of the states and territories therefore imposes an additional degree of complexity into the system, but this effect is not analysed separately here.

Trucks using diesel pay excise of 34.697 cents per litre, plus 'state' excise. In setting registration charges for trucks heavier than 4.5 tonnes, the NRTC 'regards' 18 cents per litre of this amount to be a road use charge. That is, the NRTC assumes that trucks have already contributed to road costs to the extent

FIGURE 1



of 18 cents per litre in excise. The practical effect is to reduce heavy vehicle registration charges below the level they otherwise would have been.

The NRTC system does not mean that 18 cents per litre is *actually* hypothecated to road construction and maintenance. Nor does it mean that trucks pay an economically rational charge for the use of roads. However, the NRTC system effectively provides road vehicles with a rebate on excise: shown by the dotted line in figure 1. In other words, trucks receive an implicit rebate simply because they already pay excise and because they use roads.

Domestic shipping receives a rebate that is conceptually similar to that for trucks. An amount of 5.31 cents per litre on fuel other than that used for 'domestic' purposes (see below), is regarded under the *Excise Act 1901* and the *Land Transport Development Act 1988* as a 'road user charge' It is rebated to ship operators on the excise paid on diesel used by ships. In other words, ships receive a rebate for not using roads. Railways and aircraft do not receive equivalent rebates under this legislation.

Moreover, domestic shipping receives a rebate on diesel excise at the rate of about 26 cents per litre (the proportion varies with ship size) on 25 per cent of fuel used for on-board 'domestic' uses (that is, other than for propulsion) such as cooking, heating and lighting. The amount of this rebate is revised regularly by the Australian Customs Service. Fuel oil which is used solely for propulsion is subject to excise at 7.2 cents per litre, with no rebates.

Rail transport, by contrast, pays the full diesel excise without any rebate, even though it also does not use roads. (Use of roadrailer technology complicates the picture, but not significantly.) Excise collected from rail operators is not hypothecated to rail infrastructure. Whether in fact railways subsidise road users of diesel fuel is a moot question that depends on whether diesel excise is considered to be a general revenue-raising levy, an indirect method of financing infrastructure, or both.

The *Customs Act 1901*, allows rebates of diesel excise in respect of mining operations or primary industry. A rebate is allowed for diesel used in transporting minerals or ores from a mine to another place for beneficiation². Trains carrying ore from mines to ports do not qualify for an excise rebate for fuel used if their cargoes are loaded directly into ships. However, a rebate is paid if the ore is beneficiated before export. The same applies to trucks, but not on public roads. For primary industry, an excise rebate is provided for fuel used in on-farm operations and in transporting grain (on private roads only) from the farm gate to storage silos. The rebate also applies to the movement of livestock for agistment, but not on public roads. The rebate paid to miners is 2.388 cents less than the rebate paid to primary producers.

² Beneficiation involves upgrading the concentration of ores or removal of impurities, but not the final smelting or processing. For example, producing alumina from bauxite is regarded as beneficiation, but final production of aluminium is not.

Excise is levied on avgas at 17.403 cents per litre and on avtur at 1.785 cents per litre. An amount of 15.692 cents per litre of the avgas excise is paid to Airservices Australia (ASA) for services provided to general aviation (piston engine) aircraft, while the balance of 1.711 cents per litre is paid to the Civil Aviation Safety Authority (CASA) for safety regulatory services. The entire avtur excise of 1.785 cents per litre is paid to CASA.

Aircraft using avtur are charged directly for use of en-route, terminal navigation and meteorological services. However, for aircraft using avgas, a contribution towards the estimated costs of en-route and terminal navigation charges is recovered through the avgas excise (except in the case of capital city airports where direct charging applies). The Bureau of Meteorology does not receive any payment for the provision of services to operators of avgas aircraft. It appears that the costs of these services are being cross-subsidised by operators of avtur aircraft, who are charged directly for meteorological services provided to them.

Not all aircraft powered by avgas use terminal navigation services, although they all contribute to the costs of the service through excise payments. For those who do use terminal navigation and en-route services, the marginal cost is zero, so that there is no incentive to economise on the use of services where possible. Flying IFR (instrument flying rules) involves the use of en-route services provided by ASA, while flying VFR (visual flying rules) does not. Because en-route charges are levied through the excise, an aircraft that can fly VFR when conditions permit, has little incentive to do so. Similarly, the recovery of costs through the excise is not likely to provide a strong incentive for ASA to reduce costs and align services more closely to the actual needs of users.

As industry charges for aviation safety services provided by CASA are also levied through the avgas and avtur levy (the levy is the same on both fuels), there is a disproportionate burden on aircraft that carry few or no passengers at all. For example, some general aviation operations such as cattle mustering and crop dusting may use substantial amounts of fuel, but do not draw on CASA's resources to any significant extent.

Petrol users pay excise at differential rates, mainly to discourage use of leaded fuel. There are no rebates. In evidence before the Inquiry into Federal Road Funding by the House of Representative Standing Committee on Communications, Transport and Microeconomic Reform, Mr David Borthwick, Deputy Secretary of the Treasury said:

The excise that we collect on petrol is, in effect, a general revenue measure. It vastly exceeds the amount of money that the Commonwealth wants to fund on roads. It goes to the Commonwealth's coffers and part of it gets passed back to the states through general revenue grants (Australia, House of Representatives, transcript, 26 June 1997, p. CMTR 802).

Excise is generally intended to raise revenue and is therefore usually levied on goods and services having fairly inelastic demand such as tobacco, alcohol and fuel. It is not an efficient instrument for charging for the use of transport

infrastructure because it is not directly related to the social cost of using specific ports, roads, airports, or railways. Nor would it be an efficient means of reducing congestion, crashes, emissions, or noise to socially optimal levels.

In practice, the current application of fuel excise in the Australian transport sector represents an amalgam of different purposes. None of the various rationales is applied consistently between modes.

Vehicle

In the case of road transport, registration serves several purposes, including providing a means of identifying vehicles, confirming ownership, ensuring the payment of third party insurance premiums, and enforcing traffic and parking regulations. Fees are levied on the transfer of ownership of road vehicles but do not apply for the other modes.

A fire services levy of \$10 per year is paid by all vehicles except motor cycles in Tasmania. The levy provides funding for the State Fire Commission. Other states and territories do not have a similar levy.

Sales taxes on vehicles are mainly intended to raise revenue. Import duties (tariffs) are levied both for revenue reasons and to protect domestic producers from overseas competition. Sales taxes apply to cars and trucks as well as to parts and accessories, but not to vehicles, machinery and equipment used in other modes.

One consequence of sales taxes and tariffs is that car owners will keep older vehicles for longer periods before scrapping them. An older vehicle fleet is likely to be less fuel efficient overall, likely to use more leaded fuel, and may not be as safe on the road, as one of a lower average age. Older cars will also add to congestion if speeds are slower, or if they break down more often.

Operations

Payroll and company taxes apply uniformly across all modes. Because of small business exemptions, owner-operators are advantaged (at least in road transport) relative to fleet owners.

Fees incurred by vehicle operators (driver licences) exist in all modes except rail, where the cost of driver training is borne directly by rail organisations.

In some instances, the rationale for charges is difficult to comprehend. For example, the issue of a certificate of entitlement to fly the Australian flag or the red ensign involves a once-off payment of \$82, but seems redundant once a ship has been registered in Australia.

The Bureau of Meteorology provides meteorological services to aircraft and shipping. Avtur aircraft are charged directly for meteorological services.

Charges are levied by ASA according to formulas similar to those used for en-route charges (box 4) and the Bureau of Meteorology receives payment from ASA. Avgas aircraft that use meteorological services do not pay for these services directly nor through the avgas excise. It therefore appears that, in regard to meteorological services, operators of avgas aircraft are being cross-subsidised by operators of avtur aircraft.

The Bureau of Meteorology provides free services to ships by radio broadcast, as required under the international SOLAS (Safety of Life at Sea) convention.

Other imposts related to operations include a head tax levied on passengers at some regional airports, charges for single voyage permits for foreign ships carrying Australian cargo along the coast, and charges by the Australian Maritime Safety Authority (AMSA) for providing an employment service for ship ratings.

BOX 4 EN-ROUTE CHARGES IN AVIATION

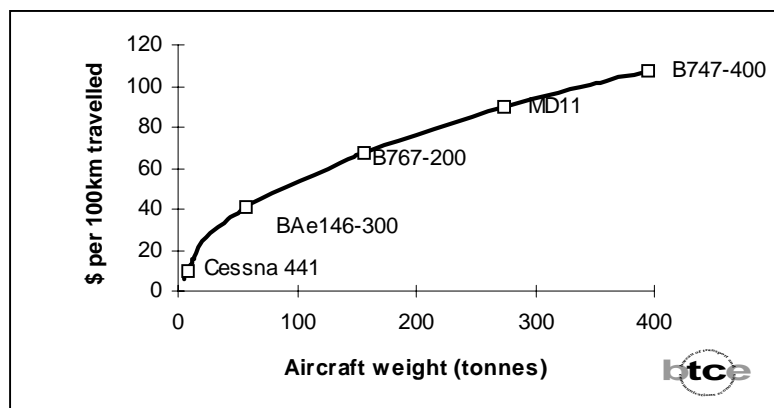
The formula for calculating charges (in dollars) for en-route services provided by Airservices Australia (ASA) for aircraft over 20 tonnes MTOW (maximum take-off weight) is:

$$\frac{(5.41 \times D)\sqrt{MTOW}}{100}$$

where D is the great circle distance reduced by 55 kilometres for each tower at the port of origin and destination. The formula for aircraft less than 20 tonnes MTOW (and the formulas for meteorological charges which are similar) are in appendix IV.

Figure 2 shows en-route charges per 100 kilometres travelled for aircraft of varying MTOW ranging from a Cessna 441 (4.47 tonnes MTOW) to a B747-400 (394 tonnes MTOW).

FIGURE 2 AUSTRALIAN EN-ROUTE CHARGES FOR AIRCRAFT



Note Aircraft weight refers to maximum legal take-off weight (MTOW).

Source BTCE.

The en-route charges for the Cessna 441 and the B747-400 are \$5.41 and \$107.47 respectively per 100 kilometres. The charges increase by about 2000 per cent for an increase in MTOW of about 9000 per cent.

Resource costs of providing en-route services to aircraft flying in controlled airspace are not related to MTOW. Presumably, MTOW has been used to reflect an operator's capacity to pay. However, charges for larger aircraft increase less than proportionately to increases in MTOW.

Charges for en-route services thus appear to be based on some undefined principle of equity. It is not evident that the approach is rational, nor is it clear why equity, rather than resource costs, should determine such charges.

Externalities

A negative externality occurs when the activities of one individual impose costs on another, and the victim cannot normally be compensated through the market mechanism. A positive externality occurs when one individual's activities confer

benefits on another individual, but without compensation for providing the benefit. Most transport externalities are negative.

In the absence of specific property rights, externalities can be 'internalised' by imposing corrective taxes. In the case of pollution, internalisation of externalities is reflected in the common expression 'polluter pays'.

The main types of externalities imposed by transport are congestion, noise, environmental pollution and crashes. Congestion can itself increase the number of crashes by increasing the probability of conflicts between vehicles. It is not clear to precisely what extent crash costs are external, but elements such as clean-up costs following a crash and tax losses to the government due to lost output are clearly externalities.

Another external effect of transport being increasingly recognised is the 'barrier effect'. As traffic increases, roads or railways can act as a barrier, impeding social interaction and compelling unprotected users to take avertive action. For example, children may be driven to school rather than allowed to walk, due to fear of traffic. Such avertive behaviour may result in an underestimation of the true cost of road crashes. Due to methodological difficulties, no estimates exist of the cost of the barrier effect.

Congestion

In the case of all four modes, congested traffic conditions result in additional vehicles slowing down all the others. The increase in average travel time for all the other vehicles is a cost to their occupants or to the delivery of freight.

BTCE (1996a) estimated the costs of road congestion in Australian capital cities and the potential benefits of controlling it. The potential benefits to Australia of controlling urban road congestion would be about \$3 billion per year. The BTCE estimates relate to marginal costs imposed on other vehicles due to the entry of an additional car within 3 kilometre grid squares. By taking account of the value of the time involved in the additional delay in travel, economically optimal road user charges were estimated for each square.

A major analytical contribution of BTCE (1996a) is to demonstrate that it is possible to estimate optimal road user charges for different parts of a city, however imprecisely. Recent technological advances mean that such charges could be applied in practice (BTCE 1996b, chapter 18). Rough estimates of the costs and revenues are presented in table 4.

TABLE 4 OPTIMAL ROAD USER (CONGESTION) CHARGES IN AUSTRALIAN CAPITAL CITIES

(\$ million 1996)

	NSW	Vic	Qld	WA	SA	ACT
--	-----	-----	-----	----	----	-----

Road expenditure ^a	2 213	1 193	1 388	813	440	36
Revenue ^b	3 183	3 443	716	310	167	126
Operating cost	16	19	11	9	5	4
Loss of fuel tax (State) ^c	61	30	0	14	6	1
Loss of fuel excise (C'wealth)	302	124	65	54	22	5
Loss of fuel excise	363	154	65	68	28	6
Initial installation	543	572	226	257	227	154

- a. Estimated state-wide expenditure on roads by all levels of government.
- b. Revenue from imposition of optimal road user (congestion) charges in capital city only.
- c. As from 7 August 1997, state and territory fuel franchise fees are collected by the Commonwealth at 8.1 cents per litre in all states and territories. Revenue is transferred to states and territories which refund fuel manufacturers or wholesalers at differential rates.

Source BTCE.

An important implication of table 4 is that congestion charges imposed in metropolitan areas alone could generate substantial revenues.

In at least two states, these revenues could cover all road expenditure for the entire state. The beneficial social effects of reduced traffic congestion are likely to outweigh operating costs (BTCE 1996b, ch. 18). To the extent that revenues from congestion taxes could be used to reduce other (distortionary) taxes like payroll tax, income tax, or excise, there would be further gains in economic efficiency.

Optimal road user charges estimated in BTCE (1996a) apply to congestion externalities only. They are additional to any charges that should be made for marginal damage to the road pavement by vehicles (see section above on infrastructure use).

Other, less efficient methods for reducing road traffic congestion include cordon tolls, parking charges, regulations on entry, time-based permits and area licensing schemes. Some of these have been applied overseas.

Road tolls applied in Australia are generally set to recover the costs of road construction and maintenance, not the cost of congestion imposed on other road users. However, to the extent that tolls reflect willingness to pay for use of uncongested roads, they are rational charges.

Rail, air and sea can also suffer traffic congestion. In Sydney, for example, freight trains are often forced to give precedence to passenger trains (especially at peak periods) because of track congestion. By giving precedence to passenger trains, the managers of the track are effectively rationing track use rather than imposing direct user charges. The economic cost of this rationing system is borne by rail freight.

Sydney is currently the only airport in Australia that imposes a congestion charge. The Federal Airports Corporation levies peak and shoulder period landing charges.

Noise

Noise (and vibration) caused by transport can have various deleterious effects on health and buildings. Effects may include stress, loss of sleep, loss of concentration due to tiredness following sleeplessness, cardiovascular disease and impairments to learning ability in children and adults. However, the precise health effects of noise are not well understood (Job 1996, p. 101). Noise is less of an issue in sea transport than it is for road, rail and air.

Noise in road transport could be mitigated by such measures as constructing open-graded asphalt roads which are more effective in suppressing noise compared with other types of road surfaces (BTCE 1997a), constructing noise barriers and double glazing homes.

Charging for noise should ideally be related to the marginal disamenity caused. In practice, noise damage functions are not known. The effects of noise depends on the type, age and speed of the vehicle and place and time of operation. There is also considerable indivisibility in noise abatement technology. Technological options include retrofitting vehicle and aircraft engines, muffling engines having high noise levels or replacing existing vehicles. However, acoustic recording devices on the ground (where effects are actually felt) could be coupled with existing air traffic control systems that identify individual aircraft, to devise charges to reflect actual noise intensities produced during over flights of various areas.

A charge for noise currently exists only for aviation. The legislation governing the aircraft noise levy allows for its imposition at any Australian airport but the levy currently applies only in Sydney. The legislation allows the levy to be imposed until the amount collected equals the cost of the noise abatement scheme (mainly sound proofing houses under flight paths) in Sydney. Cairns airport, which is owned by a State Government authority, applies a percentage premium on landing charges for late night and early morning flights.

Given the difficulty of charging for noise, the setting of standards and regulations for the reduction of noise at source are often used to deal with the problem. Curfews in air transport and noise level restrictions in road transport are commonly used. Most Australian states, territories and local governments have noise limits for road transport. However, regulations and standards effectively impose economic costs on those whose activities are limited by them. A more detailed, rigorous analysis of taxes and charges would ideally provide estimates of these costs to permit comparisons with noise charges in other sectors.

Air pollution

Transport can generate noxious emissions which affect human health. Vehicle emissions cause ozone pollution due to the action of sunlight on oxides of nitrogen and NMVOCs. Emissions also contribute to acid rain which causes

crop damage, soil acidification, water contamination and damage to buildings. However, there is considerable uncertainty about the physical impact and timing of any greenhouse effect (BTCE 1996b, pp. 11-13).

Pollution or environmental taxes on transport do not exist in Australia.

The environmental impact of air traffic, especially in the upper atmosphere, is also a cause for increasing concern. Emissions from Australian domestic aviation are projected to almost double by 2015 (BTCE 1996b, p. 373-4).

In 1989 Sweden imposed taxes on Swedish domestic flights, in order to reduce environmental damage. The tax was levied per kilogram of carbon dioxide, nitrogen oxides and hydrocarbons, based on an average flight of 380 kilometres (Alamdari and Brewer, p. 150). Zurich airport has introduced higher landing fees for aircraft having higher pollution levels (*New Scientist* 1997, p. 7). Another, more efficient approach would be to impose a tax on actual levels of individual emissions using on-board measurement devices. Such an approach would target the different types of emissions produced by a particular aircraft type and engine and would encourage operators to use the best available technology.

OVERALL ASSESSMENT

A number of broad conclusions may be drawn from the analysis:

- The current regime of taxes and charges is not applied coherently or consistently across modes.
- In some areas, outmoded charging systems are used. For example, economically rational charging for use of road infrastructure by heavy vehicles, as well as in congested metropolitan areas, is now technically feasible using electronic monitoring devices. Charges for aircraft noise could also be levied using electronic means.
- Considerable funds could be generated by imposing taxes or charges to reduce externalities. Revenues could be used to reduce income or other taxes.
- There is no logical reason to expect that if taxes and charges are imposed on an economically rational basis, they would generate equal revenue in each mode. Debate about the relative burden, or the effect of current taxes or charges on the competitive positions of various modes, is thus unlikely to be illuminating.
- A more fruitful approach would be to conduct a detailed review to identify opportunities of increasing the efficiency of the system of taxes and charges in the transport sector. Any such review would need to encompass subsidies and regulations to ensure completeness.

APPENDIX I SCOPE OF STUDY

In the first stage of its study, the BTCE set out to identify and describe the taxes and charges levied on domestic operations in the transport sector. Because the genesis of the study lies in comparisons of road and rail freight transport, the focus of the study is in freight operations. The results are documented in the following appendixes.

With some exceptions, the study covered all levels of government (Commonwealth, state and local) and all modes of transport except pipelines. The study also covered charges paid by transport operators to the private sector.

The scope of the study was limited to those taxes and charges that are largely transport specific, such as airport landing charges, charges on shipping, and fuel excise. Stamp duty, import duty and payroll tax were included because their effects might differ between transport modes, but otherwise the BTCE excluded from the study those taxes and charges that apply equally to all sectors of the economy, such as company income tax and fringe benefits tax.

Because the rationale for the study was to permit comparisons of the competitive position of different modes, its scope was limited to domestic transport operations. However, a number of taxes and charges on aviation and shipping apply equally to domestic and international services. The BTCE did not seek to identify taxes and charges specific to international operations, but any such information that came to hand is included in the appropriate appendix.

Nor did the study document the fiscal regime faced by government sector infrastructure providers, such as port authorities and government railways. These are relevant insofar as the taxes paid by infrastructure providers, and any payments they receive from government, may affect the level of charges they impose on transport operators using infrastructure. As a generalisation, however, government owned bodies operate increasingly under the conditions of a 'tax equivalent regime' in which they face the same taxes as private sector firms. Where information was available, the appendixes document government payments to the transport industry.

APPENDIX II ROAD TRANSPORT

This Appendix outlines the taxes and charges levied on trucks, buses, and private vehicles, albeit with emphasis on heavy road transport equipment, defined as trucks and buses weighing over 4.5 tonnes GVM. Operators of both heavy and light vehicles also pay the fuel excise tax and payroll tax outlined in appendixes VII and VIII. The figures presented in this appendix show only the rates at which taxes and charges are levied. The Standing Committee on Transport has published an estimate of total taxes and charges paid by heavy vehicles in 1992-93 (SCOT 1995).

NATIONAL HEAVY VEHICLE REGISTRATION CHARGE

All Australian States and Territories charge the same basic amounts for registration of heavy vehicles as set out under the National Heavy Vehicle Registration Scheme.³

In 1993, the Commonwealth Parliament passed the *Road Transport Charges (Australian Capital Territory) Act 1993*, setting registration charges for the ACT, including Jervis Bay, from July 1995. Parliaments in other jurisdictions subsequently adopted the same charges, although, for various reasons, they did not come into force until later years.⁴

Under previous arrangements, each state government had its own set of charges and regulations for heavy vehicles. At the Special Premiers Conference in 1991, the Commonwealth and state governments agreed to set up a national approach to regulation of heavy vehicles and, to this end, established the National Road Transport Commission (NRTC 1992, p. 2).

³ Individual jurisdictions may choose to allow groups of operators, such as primary producers, to register heavy vehicles for less than the standard heavy vehicle registration charge, but the Commonwealth will not make compensating payments for any such discounts allowed on the standard rates.

⁴ The National Heavy Vehicles Registration Scheme charges were introduced for the ACT, Queensland, and vehicles registered under the Federal Interstate Registration Scheme on 9 July 1995, by Victoria on 1 January 1996, by NSW, the Northern Territory and South Australia on 1 July 1996, by Tasmania on 1 October 1996, and by Western Australia on 16 January 1997.

One of the functions of the NRTC is to recommend heavy vehicle charges that will:

- achieve full cost recovery.
- achieve a reasonable balance between administrative simplicity, efficiency and equity.
- improve the link between pricing and investment decisions and minimise the incentive to 'shop around' for lower registration charges.
- adopt a common methodology based on the PAYGO principle.
- minimise the incentive for operators to 'shop around' among different states and territories for lower charges.

The *NRTC Act 1991* provides for only five types of charges to recover identified costs (NRTC 1992, p. 3):

- access charges;
- road use charges (such as the diesel fuel excise);
- mass-distance charges;
- permit fees for over-dimension and overweight vehicles in higher mass or distance categories; and
- a fee for travel between zones (the Act specifies two zones for charging purposes: Zone A comprises NSW, Victoria, Tasmania, and the ACT, Zone B Comprises Queensland, Western Australia, South Australia and the Northern Territory).

The NRTC suggested that the major objective in setting heavy vehicle charges should be to improve transport efficiency (NRTC 1992, p. 3), and that it was constrained in meeting this objective because its legislation:

- limited the NRTC to using the five charging mechanisms listed above;
- required the NRTC to take road expenditure as the measure of the cost of using roads. The NRTC said that expenditure is a deficient measure of road track costs, and is limited in ignoring other costs such as externalities; and
- excluded revenue distribution and road funding from NRTC consideration. Rather, the legislation implies revenue and funding neutrality to the Federal Government, and to the states and territories in total.

Given these constraints, the NRTC calculations were limited to allocating road expenditures among cars and the various types of heavy vehicles. The NRTC did this by making a pro-rata allocation of non-separable costs among cars and heavy vehicles on the basis of vehicle-kilometres travelled, and by using a range of other statistics to allocate separable costs that are directly attributable to road use (NRTC 1993, p. 3). Some of the parameters used in allocating separable costs were:

- vehicle kilometres travelled, used in allocating costs thought to depend on the number of vehicles travelling on a road;

- passenger car equivalent unit kilometres, based on the space required to accommodate different vehicles associated with traffic operations (a truck is taken as equivalent to two or three passenger cars) and the distance travelled by the vehicles;
- equivalent standard axle-kilometres, a measure of the relative pavement wear caused by different types of vehicles (which is calculated using a formula based on a fourth power function of axle load), and the distance travelled by vehicles in each class; and
- average gross mass-kilometres, which is based on the average gross mass and distance travelled by vehicles in each class and is used in allocating costs believed to be related to the mass of axles passing over the road.

The NRTC then estimated the amount of road expenditure attributable to each class of heavy vehicle in proportion to the contribution of each class to the total of each of the measures of road use that were used in allocating costs (outlined above). As road expenditure was allocated to classes of vehicles, the amount allocated to an individual vehicle depended on the average distance travelled and the weight carried by the 'average' vehicle in each class. This allocation procedure applied to arterial road expenditure only, along with estimates of arterial road use, because insufficient data were available to apply the same procedure to local roads.

A notional allocation for local roads expenditure is made by applying the arterial expenditure per kilometre travelled, per PCU travelled, per ESA-km travelled, and per tonne-km travelled to estimates of local road use for each vehicle class. The notional excise revenue from each class of vehicle was estimated from the fuel consumed by the 'average' vehicle in each class.

To recover road expenditure attributable to heavy vehicles, the NRTC set a schedule of road user charges comprising lump sum annual fees for each type of heavy vehicle, plus a notional 18 cents per litre from the excise on diesel fuel. The notional fuel charge does not affect the price of fuel paid by vehicle operators because it is a nominal portion of the existing diesel excise collected by the government. The NRTC intended that the 18 cents per litre charge would not be indexed, but rather would vary only with changes in heavy vehicle charges. In practise this has not occurred. Box II.1 outlines the method used by the NRTC to calculate the lump sum annual fee for each class of vehicle.

The NRTC described its scheme as combining an access charge and a mass-distance charge into a single fixed annual charge for each type of truck, trailer, and prime mover (NRTC 1992, p. 3).

- the annual fee for a prime mover depends on the number of axles it has and whether it is nominated to haul a semi-trailer, a B-Double, or a road train.
- for a rigid truck, the registration fee depends on the number of axles, MRC weight (Mass Rating for Charging), and whether it is nominated to haul one or more trailers.

- the registration fee for trailers is \$250 per axle per annum.

Table II.1 shows the annual registration charges for selected prime movers, demonstrating how the amount varies with numbers of axles and nominated use. The total cost of registering an articulated truck equals the cost in table II.1 plus registration for the semi-trailer at \$250 per axle.

BOX II.1 NRTC PROCESS FOR CALCULATING THE FIXED COMPONENT OF THE HEAVY VEHICLE CHARGE

Step 1 Allocate road expenditure by vehicle class

Step 2 Set the 'road use charge' component of the heavy vehicle charge

The road use charge was set at a notional 18 cents per litre of diesel excise. At this level, total road use charges paid by the lightest class of two axle rigid trucks (less than 7 tonnes GVM) just equal their allocated share of road expenditure.

Step 3 Set the 'road access charge' component of the heavy vehicle charge

The road access charge was set at \$250 per vehicle, a level that minimises inconsistencies between charges for vehicles just below and just over 4.5 tonnes GVM, the threshold for heavy vehicle charges.

Step 4 Redistribute revenue from access charges

For some vehicle classes, revenues from road use charges (18 cents per litre excise) and road access charges (\$250 per vehicle) would exceed their allocated share of road expenditure. For other classes of vehicle, allocated road expenditure would exceed revenues. The NRTC made a notional redistribution of revenues from vehicle classes with a surplus to those with a deficit.

Step 5 Calculate an additional fixed annual charge

The additional fixed annual charge for each vehicle class was calculated as:

- the allocated expenditure for the vehicle class, less
- the total revenue for the vehicle class from: road use charge payments (the 18 cents per litre fuel excise), the access charge revenue (\$250 per vehicle), and the notional redistribution of revenue among vehicle classes (step 4).

Step 6 Calculate the total fixed annual charge for each vehicle class

The total fixed annual charge for each vehicle class equals the sum of the access charge (\$250 per vehicle) and the additional fixed charge (step 6).

TABLE II.1 ANNUAL REGISTRATION CHARGES FOR SELECTED PRIME MOVERS
(\$ per annum)

<i>Nominated to haul</i>	<i>2-axles</i>	<i>3-axles</i>
Semi trailer	800	3250
B-Double	3250	4250
Road train: 2 trailers	4750	4750
Road train: more than 2 trailers	5250	5250

Note Registration charges shown in the table are for prime movers only; registration charges for trailers cost extra. The same charges apply in all jurisdictions.

Source Road Transport Charges (Australian Capital Territory) Act 1993.

TABLE II.2 REGISTRATION CHARGES FOR TRUCKS AND PRIME MOVERS

<i>Vehicle type</i>	<i>2-axle</i>	<i>3-axle</i>	<i>4-axle</i>	<i>5-axle</i>
Rigid trucks				
Truck type 1	300	600	900	900
Truck type 2	500	800	2000	2000
Short combination truck	600	2100	2100	2100
Medium combination truck	4000	4000	4250	4250
Long combination truck	5250	5250	5250	5250
Prime movers				
Short combination prime mover	800	3250	4250	4250
Medium combination prime mover (B-Double)	3250	4250	4500	4500
Long combination prime mover (type 1)	4750	4750	4750	4750
Long combination prime mover (type 2)	5250	5250	5500	5500

Note Box II.1 gives definitions of the terms used in this table and they are illustrated in figure II.1. The same charges apply in all jurisdictions.

Source Road Transport Charges (Australian Capital Territory) Act 1993.

TABLE II.3 REGISTRATION CHARGES FOR BUSES

<i>Bus type</i>	<i>2-axle</i>	<i>3-axle</i>
Bus type 1 ^a	300	-
Bus type 2 ^b	500	1250
Articulated bus ^c	-	500

a Bus type 1; a rigid bus with 2 axles and MRC less than 12 tonnes, or a rigid bus with 3 axles

b Bus type 2; 2 axles and an MRC over 12 tonnes or 3 axles

c Articulated bus; a bus of two or more rigid sections joined together.

Note The same charges apply in all jurisdictions.

Source Road Transport Charges (Australian Capital Territory) Act 1993.

BOX II.2 DEFINITIONS OF TRUCK TYPES

- Truck type 1; a truck with 2 axles and an MRC not over 12 tonnes, or 3 axles and an MRC not over 16.5 tonnes, or 4 axles and an MRC not over 20 tonnes.
- Truck type 2; not a type 1 truck.
- Short combination truck; a truck nominated to haul one trailer.
- Medium combination truck; a truck nominated to haul one trailer where the combination has more than 6 axles.
- Long combination truck; a truck nominated to haul 2 or more trailers.
- Short combination prime mover; a prime mover nominated to haul one trailer.
- Medium combination prime mover; a prime mover nominated to haul two trailers where the second trailer is mounted on the end of the first (a B-Double).
- Long combination prime mover (type 1); a prime mover nominated to haul two trailers but not a B-Double.
- Long combination prime mover (type 2); a prime mover nominated to haul more than two trailers.
- MRC Mass rating for charging, the maximum mass of the vehicle , including any load, recorded on its compliance plate.

Note Figure II.1 illustrates some types of heavy vehicles.

Source Road Transport Charges (Australian Capital Territory) Act 1993.

Table II.2 shows the complete schedule of registration charges for trucks and prime movers while table II.3 gives charges for buses. Definitions of the terms used in the legislation are given in box II.2 and illustrated in figure II.1.

The legislation also specifies formulae for calculating permit charges for special purpose vehicles, and for vehicles carrying heavy, indivisible loads, with loaded mass exceeding 125 tonnes.

States and territories do not levy additional fees and charges on heavy vehicle operators to recover costs of supplying and maintaining roads and bridges, although administrative fees are levied , along with some additional taxation measures impacting on vehicle operators, such as stamp duty.

MOTOR VEHICLE WEIGHT OR ENGINE CAPACITY TAX

Prior to the National Heavy Vehicles Registration Scheme, all jurisdictions levied a tax based on factors such as vehicle weight (tare or gross), engine capacity, engine bore diameter, or number of engine cylinders. The tax used to apply to all vehicles, but heavy vehicles, weighing over 4.5 tonnes, now pay the National Heavy Vehicle charge. The vehicle weight/engine capacity tax now applies mainly to passenger vehicles and light commercial vehicles weighing less than 4.5 tonnes.

A simplified summary of the tax as it applies to private vehicles and motor cycles is shown in table II.5. Some jurisdictions charge a slightly higher tax on business vehicles (NSW, Western Australia, and Tasmania).

TABLE II.4 MOTOR VEHICLE WEIGHT/ENGINE CAPACITY TAX ON PRIVATE VEHICLES

<i>Jurisdiction</i>	<i>Tax basis</i>	<i>Tax on private vehicle</i>	<i>Motor cycle</i>
New South Wales ^a	Weight	\$123 to \$245	\$40
Victoria	Weight	\$140	\$28
Queensland	No of cylinders	\$127 to \$408	\$51
Western Australia	Power and weight	\$3.08 per 100 kg tare weight plus \$1.61 per power unit	\$13 up to 250 cc and \$18 for over 250 cc
South Australia	No of cylinders	\$64 to \$188	\$22
Tasmania	No of cylinders	\$72 to \$161	\$12
Northern Territory	Engine capacity and No of cylinders	\$15 to \$302	\$10 up to 600 cc and \$15 over 600 cc
ACT ^b	Weight	\$217	\$65

a For vehicles to 2.5 tonnes.

b For vehicles to 2 tonnes

Notes Figures are rounded to the nearest dollar.

In some jurisdictions, higher charges apply for business vehicles.

Source NSW Treasury 1996, p. 31.

MOTOR VEHICLE REGISTRATION DUTY

All states and territories have a motor vehicle registration duty based on the value of the vehicle. Registration duty is payable for all cars, buses and trucks when a vehicle is first registered or its ownership is transferred (NSW Treasury 1996, p. 10). (The NSW Treasury classifies registration duty as a tax on financial transactions, probably because it is a tax on the sale of vehicles.)

The value of the duty for heavy trucks is:

- \$3 per \$100 or part thereof in NSW, Western Australia, Tasmania, Northern Territory, and the ACT.
- \$60 plus \$3 per \$100 or part thereof in South Australia.
- \$2 per \$100 or part thereof in Queensland.
- \$8 per \$200 or part thereof in Victoria.

MOTOR VEHICLE REGISTRATION FEE

All States and Territories charge a motor vehicle registration fee for all vehicles (table II.4), although in Victoria and Queensland the fee is payable only once, on the initial registration of a vehicle. South Australia charges \$20 per vehicle for new registrations and \$5 per vehicle for renewals, while the Northern Territory charges an additional \$20 per annum inspection fee for vehicles over

three years old and under 4.5 tonnes. These fees are broadly based on administration costs.

TABLE II.5 MOTOR VEHICLE REGISTRATION FEES

<i>State</i>	<i>Car</i>	<i>Lorry</i>	<i>Cycle</i>
New South Wales	40.00	40.00	40.00
Western Australia	12.50	12.50	12.50
South Australia Renewal	5.00	5.00	5.00
South Australia New Registration	20.00	20.00	20.00
Tasmania	57.00	57.00	46.00
Northern Territory ^a	7.00	7.00	7.00
Australian Capital territory	54.00	33.00	33.00

a The Northern Territory also charges an inspection fee of \$20 for vehicles over 3 years old and less than 4.5 tonnes GVM.

Notes Victoria charges a plate fee of \$22 per vehicle on first registration. Queensland charges a traffic improvement fee of \$32.90 and a plate fee of \$16.30 on first registration.

Source NSW Treasury 1996, p. 31.

VEHICLE INSPECTIONS

Each jurisdiction sets its own regulations on vehicle inspection requirements. There is no standard national approach. All jurisdictions require some inspections of buses, trucks and cars. Inspections may be required when vehicles are new, at regular intervals thereafter, when ownership of a vehicle changes, or on an ad hoc basis at the initiative of police or road authorities. The last known survey of inspection requirements and fees was carried out about 1993 (NRTC 1995, p.11) but arrangements may have changed since then.

Because of privatisation, vehicle inspections do not always involve a government charge. In Victoria, inspections are required only on change of ownership of vehicles but the issue of Roadworthy Certificates is performed by private licensed vehicle testers. Before the function was privatised, vehicle inspections were carried out by Vic Roads personnel (Piper, G, Vic Roads, pers. comm., 17 September 1997). Fees for issuing certificates are not regulated but are market driven, that is, set by individual vehicle testers. Current average market rates for issuing a certificate are about:

- \$40 to \$45 for a car
- \$150 for a truck
- \$350 for a bus
- \$35 for a taxi.

In New South Wales, passenger cars over three years old require a mechanical inspection certificate (the so called pink slip). to be registered The inspection service is carried on a fee for service basis by the private sector. Trucks, on the other hand, have to be inspected by the RTA within twelve months of first

registration and every year thereafter (Clancy, J., RTA, pers. comm., 17 September 1997).

OTHER ROAD FEES

Other vehicle related charges for NSW are listed below (NSW Treasury 1996, pp. 32-33). Similar charges apply in other states and territories although the amounts vary between jurisdictions:

- Transfer fee: \$20 for a truck.
- Drivers licence: \$108 for five years.
- Learners permit: \$14.
- Licence test fee: \$31.
- A \$43 surcharge on motor vehicle third party insurance, of which \$3 is paid to the courts to fund costs of third party insurance claims.

In Tasmania, there is a fire services levy of \$10 per year paid by all vehicles except motor cycles (Snow, P., Transport Commission, pers. comm., 8 October 1997). The levy is collected by the Transport Commission under the *Traffic Act 1924* (with reference to the *Fire Service Act 1979*) and provides funding for the State Fire Commission.

PARKING SPACE LEVY

An annual levy of \$200 per space per annum is charged by the NSW Government on off-road parking spaces within the City of Sydney and a prescribed area of the Municipality of North Sydney. Some exemptions and concessions apply. (NSW Treasury 1996, p. 17).

TOLL ROADS

Seven road tolls currently operate in Australia: the Sydney Harbour Bridge, the Sydney Harbour Tunnel, plus three motorways in New South Wales and two in Queensland. Details are given in table II.6.

TABLE II.6 TOLL ROAD CHARGES

	Length (km)	Toll (\$)	
		Cars	Trucks
New South Wales			
Sydney Harbour Bridge ^a	3.8	2.00	2.00
Sydney Harbour Tunnel ^a	4.5	2.00	2.00
M2 Motorway	22.0	2.50	6.00
M4 Motorway	2.9	1.50	1.50
M5 Motorway	8.8	2.50	5.50
Queensland			
Logan Motorway ^b	31.0	0.70-1.50	1.60-4.00
Gateway Motorway	3.25	2.00	5.00

a Southbound traffic only.

b Logan Motorway toll varies with distance travelled. Vehicles entering at the start of the tollway pay the full charge.

Source O'Neil, B., L-Pol, pers. comm., 15 September 1997.

LOCAL GOVERNMENT

In New South Wales, Section 94 of the *Environment Protection and Assessment Act 1979* allows local government authorities to levy a once-off, lump sum, charge on new developments to cover the cost of providing or maintaining local amenities and services (ERM Mitchell McCotter, pers. comm., 26 September 1997). Payment of the levy is required to receive a Development Consent from the council allowing construction work to begin.

The Act gives councils the power to recover the costs of building roads for new housing developments, and of repairing damage to local roads by heavy trucks carrying stone from new quarries.

AGGREGATE REVENUE AND EXPENDITURE

Revenue from road related taxes and charges totalled \$13.5 billion in 1995-96 of which \$8.4 billion (62 per cent) came from Commonwealth excise on petrol and diesel fuel (BTCE 1997b). Table II.7 shows the percentage of road revenue generated by each of the other taxes and charges. Much of this revenue was paid into consolidated revenue along with income from other sources.

TABLE II.7 SELECTED MOTOR VEHICLE TAXES AND CHARGES
1995-96

<i>Taxes and charges</i>	<i>Per cent</i>
• Commonwealth petroleum products excise	62
• Vehicle registration fees	15
• Stamp duty on vehicle registration	8
• Drivers' licence fees	2
• Fuel franchise fees	11
• Other	1
• Tolls	1
Total	100

Source BTCE 1997b.

Table II.8 shows the amount of road related expenditure by each level of government for the four years to 1995-96. The Commonwealth Government is responsible for the construction and maintenance of the National Highway System, Roads of National Importance (RONI), and the Black Spots safety program. The Commonwealth also provides general purpose revenue to the states which they may spend on roads.

TABLE II.8 GOVERNMENT FUNDING OF ROAD RELATED EXPENDITURE
(\$ million)

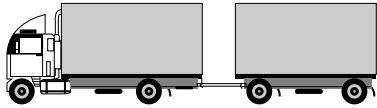
<i>Government</i>	<i>1992-93</i>	<i>1993-94</i>	<i>1994-95</i>	<i>1995-96</i>
Commonwealth	2177	1552	1535	1602
State	2088	2440	2599	3064
Local	1717	1667	1710	1703
Total	5982	5659	5844	6369

Note Figures are rounded to the nearest million dollars

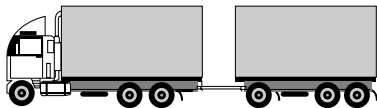
Source BTCE 1997b.

**FIGURE II.1 NATIONAL HEAVY VEHICLE REGISTRATION SCHEME:
CHARGES FOR SELECTED COMBINATION VEHICLES
(\$ p.a.)**

RIGID TRUCKS AND TRAILERS

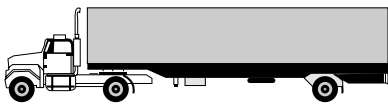


\$1,100
SHORT COMBINATION TRUCK, 2-AXLE

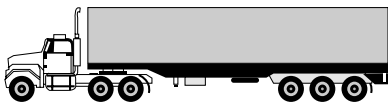


\$2,850
SHORT COMBINATION TRUCK, 3-AXLE

SEMI-TRAILERS

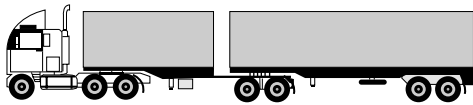


\$1,050
SHORT COMBINATION PRIME MOVER, 2-AXLE

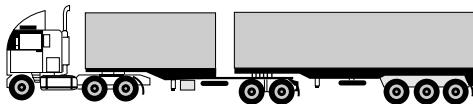


\$4,000
SHORT COMBINATION PRIME MOVER, 3-AXLE

B-DOUBLES

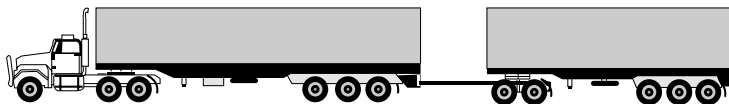


\$5,250
MEDIUM COMBINATION PRIME MOVER, 3-AXLE

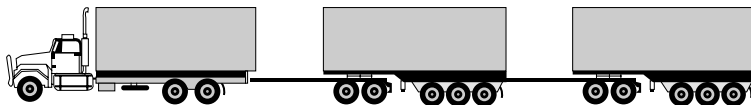


\$5,500
MEDIUM COMBINATION PRIME MOVER, 3-AXLE

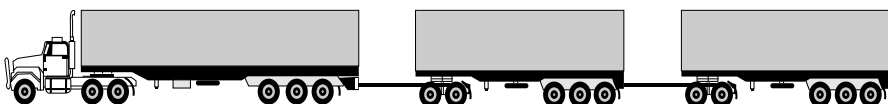
ROAD TRAINS



\$6,750
LONG COMBINATION
PRIME MOVER TYPE 1, 3-AXLE



\$7,750
LONG COMBINATION TRUCK, 3-AXLE



\$8,500
LONG COMBINATION
PRIME MOVER TYPE 2,
3-AXLE

- Notes*
1. The cost shown with each combination vehicle is the total of the National Heavy Vehicle registration charges for the truck or prime mover plus trailer(s).
 2. The title beside each combination vehicle is the description of the truck or prime mover as used in the *Road Transport Charges (Australian Capital Territory) Act 1993* (see box 2.1).
 3. The same charges apply in all States and Territories.

Source *Road Transport Charges (Australian Capital Territory) Act 1993.*

APPENDIX III RAIL

Until quite recently, government railways in Australia have operated entirely as vertically integrated industries. They have therefore not published, or perhaps even determined, many of the charges paid within their industry. Whereas private air and sea operators face a range of charges for using navigation aids and port infrastructure, such costs were simply internalised by rail systems.

With the advent of national competition policy, however, the setting of rail infrastructure charges is likely to become more transparent, even if they are not actually published. So far, however, only two governments have published details of the arrangements that will be used to set access prices for private operators who wish to operate trains on government owned tracks:

- the Track Access Unit of Australian National has published a detailed schedule of prices that will be charged to operators using AN tracks.
- the Rail Access Corporation of NSW has published the policy it will follow in setting rail access prices, but will generally not publish 'posted' prices.

No details of rail access prices for Queensland have yet been published, although the *Queensland Competition Authority Act 1997* has been passed by the Queensland Parliament. The Act establishes the Queensland Competition Authority (QCA) which is responsible for regulating third part access to infrastructure (the prices set by GBEs and competitive neutrality being its other areas of work). The Queensland Department of Transport is drafting a Rail Access Code and the Network Access Unit of Queensland Rail is drafting a Rail Access Undertaking, both of which are required by the Act.

In Victoria, the agency responsible for negotiating track access with rail operators is the Victorian Rail Track Corporation, trading as VicTrack Access (Spicer, T., VicTrack, pers. comm., 9 October 1997). The corporation was set up under the *Rail Corporation Act 1996* and began operations on 1 July 1997. There are at least ten rail operators using Victorian tracks under agreements inherited by VicTrack from the Public Transport Corporation.

Western Australia has been negotiating rail access prices with other operators for some time (NRC, TNT, and SCT), but has not announced if it will establish a general rail access regime. Until state regimes are established, the Commonwealth regime for third party access applies, as provided for in the

Commonwealth *Trade Practices Act 1974 (Queensland Competition Authority Bill 1997: Explanatory Notes, p. 8).*

AUSTRALIAN NATIONAL TRACK ACCESS PRICING

The Australian National Railways Commission, trading as Australian National (AN), controls the trans Australia line from Kalgoorlie in Western Australia to Broken Hill in NSW and to Wolseley on the border between South Australia and Victoria. AN also controls the line from Tarcoola (a station on the trans Australia line) to Alice Springs.

AN's published price for access to these lines is based on a two part tariff comprising a flagfall component and a variable charge (table III.1).

- the flagfall is a fixed amount for each section of track determined by a combination of train type and AN's assessment of market demand. AN classifies trains into four types - premium, high, standard, or low - and sets a separate flagfall price for each type on each section of track (table III.2 gives definitions of the types). Flagfall prices are presumably based on the ability to pay and the demand for preferred time windows on the track.
- the variable charge is a price per Gross Tonne Kilometre (GTK) generated by each train. The variable rate on each section of track is the same for all types of trains.

TABLE III.1 TRACK ACCESS PRICES FOR AUSTRALIAN NATIONAL LINES

<i>Route section</i>	<i>Variable price (\$/000 GTK)</i>	<i>Flagfall price by train type (\$)</i>			
		<i>Premium</i>	<i>High</i>	<i>Standard</i>	<i>Low</i>
Pt Augusta - Tarcoola	1.527	869	753	637	580
Tarcoola - Kalgoorlie	2.177	4330	3752	3176	2887
Tarcoola - Alice Springs	3.951	3263	2827	2392	2175
Dry Creek-Crystal Brook	2.854	542	469	397	361
Crystal Brook-Pt Augusta	2.201	404	350	296	269
Pt Augusta - Whyalla	3.734	141	123	104	94
Adelaide Metro	3.319	44	38	32	29
Goodwood - Belair	3.265	68	59	49	45
Belair - Wolseley	1.934	596	516	436	397
Crystal Brook - Broken Hill	2.387	723	627	530	482

Notes For part travel in a segment, the flagfall per train will be calculated pro rata according to distance travelled in that segment and the variable cost will be calculated as the product of the distance travelled and the variable rate.

Source Track Access 1995.

TABLE III.2 AN CLASSIFICATION OF TRAINS FOR ACCESS PRICING

<i>Flagfall</i>	<i>Train type and description</i>	<i>Trains</i>
Premium	Trains scheduled to operate at 115 kph	Passenger, bi-modal trains
High	Trains scheduled to operate up to 110 kph	Superfreighters
Standard	80 kph general freight and ore trains	Express goods
Low	Off peak path trains	Metro shunts and work trains

Source Track Access 1995.

TABLE III.3 SECTION DISTANCES ON AUSTRALIAN NATIONAL NETWORK

<i>(km)</i>	
<i>Route</i>	<i>Distance</i>
Pt Augusta - Tarcoola	412.5
Tarcoola - Kalgoorlie	1283.0
Tarcoola - Alice Springs	830.5
Dry Creek-Crystal Brook	182.0
Crystal Brook-Pt Augusta	114.0
Pt Augusta - Whyalla	73.0
Adelaide Metro	16.5
Goodwood - Belair	16.5
Belair - Wolseley	286.0
Crystal Brook - Broken Hill	372.0

Source Track Access 1995.

NSW RAIL ACCESS CORPORATION

Rail operators wishing to use NSW tracks need to negotiate a price with the Rail Access Corporation, the body which 'owns' the rail infrastructure.

The arrangements under which the Rail Access Corporation deals with rail operators are set out in The *NSW Rail Access Regime* (1996a pp. 4948-4961), which was promulgated in the *NSW Government Gazette* in August 1996.

The Corporation subsequently published an interim *Access Pricing Policy* (RAC 1996) which sets out the Corporation's basic pricing principles and the processes for negotiating access, price reviews, and pricing disputes. The material in this section is largely based on the *Access Pricing Policy*.

Basic Principles

The goal of Rail Access is to promote greater access to the NSW rail infrastructure and to reduce the cost of access to rail operators. Consistent with this, Rail Access seeks to earn a return on capital employed, within the limits imposed by Commonwealth and State legislation (RAC 1996, s. 2).

Access prices negotiated by the Corporation are subject to 'floor tests' and 'ceiling tests' (RAC 1996, s. 3). These tests require that Rail Access sets prices such that;

Floor Tests

- no operator will pay less than the incremental costs imposed by that operator's operations.
- no group of operators will collectively pay less than the incremental costs imposed by their combined operations; and
- the full incremental costs (including fixed costs) of any line section are met by revenues from operators traversing that section.

Ceiling Tests

- no operator will pay more than the stand-alone cost of servicing their operations.
- no group of operators will collectively pay more than the stand-alone costs of servicing their combined operations; and
- the full stand alone costs of any line section will only be met by operators traversing that line section.

Rail Access will always seek to negotiate prices that exceed incremental costs, up to the ceiling limits specified in the Rail Access Regime.

Rail Access will always seek to negotiate prices that make an appropriate contribution to fixed cost. This will be done in a way consistent with the aims of promoting access to the network and making a return on capital.

Provided it is consistent with the Commonwealth *Trade Practices Act 1974* and the floor test, Rail Access can practise price differentiation (RAC 1996, s. 4). (That is, it may charge prices such that the contribution to fixed costs varies between customers.)

Prices can differ for many reasons, including the different requirements of customers and the desire to maximise traffic by lowering the cost of access per journey. Factors justifying price differentiation would include, but will not necessarily be limited to:

- the characteristics of rolling stock or train consist.
- the level of priority demanded in timetabling and train operations.
- demand and availability of train paths or track capacity at peak times of the day, week, or year.

- the standard of infrastructure required and the cost of providing that infrastructure.
- any financial or capital contributions from operators to upgrading rail infrastructure.
- the availability of Government support to particular train movements, customers, or traffics.
- the characteristics of the market being served.

Except where price differentiation is practised in a way consistent with the Regime, Rail Access will not charge prices that unduly favour or discriminate against different operators competing for the same commodity flows.

Subject to Government policy or directive, Rail Access will not use its profits to cross subsidise between operators or sections of the network (RAC 1996, s. 3.5). In this context, a cross subsidy is defined as a charge on one operator (or movement) for all or part of the incremental costs imposed on the system by another operator or movement.

Structuring of Prices

Rail Access prices will generally be in the form of a two part tariff (RAC 1996, s. 6), comprising:

- a fixed component (the network charge), representing the access rights being purchased and reflecting the fixed or provisioning costs of the network.
- a variable component (the usage charge) reflecting those costs that vary with usage; it will generally be levied on gross tonne-kilometres, although in specific circumstances it may be based on the net tonnes.

Where appropriate, Rail Access may depart from the two part tariff and instead devise charges in a form to meet the needs of specific circumstances. Such specially tailored charges may consist of: fixed lump sum fees; variable charges levied on gross tonne kilometres, train paths, gross or net tonnage, or any other charging bases as agreed between Rail Access and the customer in question. An operator who is the sole user of a line may pay a fixed periodic charge, reflecting the fixed nature of the costs in servicing that operator.

Posted Prices

Rail Access will not normally 'post' prices; rather, prices will be negotiated with individual customers (RAC 1996, s. 8).

Where individual negotiated prices are not feasible, for example with one-off or special train movements, Rail Access may adopt a 'posted pricing' approach which will be developed through consultation with affected customers.

Confidentiality

Access prices will be confidential between Rail Access and individual customers, except as required by the Regime or in the case of 'posted prices' (RAC 1996, s. 7). Rail Access will lodge all agreements, including price details, with the NSW Independent Pricing and Regulatory Tribunal (IPART).

Indicative Prices

Rail Access will provide indicative prices to existing and prospective rail operators who demonstrate financial and managerial capability to sustain their proposed operations (RAC 1996, s. 9). Rail operators will be taken to include:

- organisations with the capacity to obtain accreditation under the *Rail Safety Act 1993* from the Department of Transport for the proposed rail operation; and
- organisations with the capacity to secure and properly manage the services of an accredited rail operator to undertake the proposed rail operation.

Where an operator seeks an indicative access price to serve a single end-customer, or a limited number of end-customers, Rail Access will seek evidence of support from the end customers before providing indicative prices.

Price reviews

Rail Access prices will be reviewed annually, or otherwise as agreed with the customer (RAC 1996, s. 10). The mechanism of price review will also be agreed with the customer.

Rail Access expects to make considerable cost savings from efficiency improvements. In reviewing prices:

- once the target rate of return on capital is achieved, Rail Access will share a proportion of subsequent cost savings with its customers.
- once revenues meet the ceiling rates of return specified under the Regime, Rail Access will return 100% of relevant cost savings to customers.

Price disputes

The Regime requires all Rail Access agreements to define a process for resolving any disagreements on access prices (RAC 1996, s. 10). The Independent Pricing and Regulatory Tribunal (IPART), or an alternative agreed by IPART, must be specified in the agreement as the arbitrator of any such disputes.

Where Rail Access and an existing or potential customer fail to agree on a price for a proposed freight movement which is not the subject of an existing Access Agreement, the matter may be referred by either party to IPART for arbitration.

Coal

The Regime defines special access pricing arrangements for coal. Where there is any conflict, the provisions of the Regime override the Access Pricing Policy (RAC 1996, s. 12).

Investment

Where investments are carried out to meet the needs of operators, the RAC will seek to recover an appropriate return on the investment through access charges (RAC 1996, s. 5). Where an upgrading investment is wholly or partially funded by operators, access prices will recognise their contribution to the project. Similarly, where upgrading investment is funded by a Government grant or other non-repayable funding, this will be reflected in access prices. In all cases, Rail Access will seek an appropriate contribution above access prices.

Rates of Return

Permitted rates of return on capital for Rail Access will be published in the *NSW Government Gazette* from time to time. The rate will be determined by the Minister, following consultation with IPART, and approved by the Premier.

The rate of return gazetted when the Regime came into force was 14 per cent nominal per annum, post tax (New South Wales Rail Access Regime 1996b, p. 4948).

OTHER TAXES

Government railways in Australia began life as authorities or departments operating under the 'shield of the crown' that gave them immunity from many of the taxes and charges faced by private sector firms.

In recent years, railways have lost most, if not all, of these exemptions following government decisions to corporatise their trading enterprises and to implement national competition policy. The end result of these reforms is illustrated in table III.4 which summarises the taxes and charges paid by Queensland Rail, the only state system to be fully corporatised⁵.

With some specific exceptions, table III.4 shows that Queensland Rail faces the same set of taxes and charges as private sector firms:

- the exemption from sales tax on 'all other items' is available to all public railways, not just government systems (see appendix VIII).
- the loan guarantee charge is levied by governments on the borrowings of their trading enterprises so that they face similar interest costs to the private

⁵ Being private sector firms, NRC, TNT and SCT are also fully corporatised.

sector. Loan guarantee charges were introduced as part of National Competition Policy, the aim being to ensure that government trading enterprises operate in a 'tax equivalent regime' (TER), that is, equivalent to the tax regime facing the private sector.

- taxes and charges are not paid on rail corridor land because it is owned by the State and rented to Queensland Rail for a nominal sum.

In NSW, the State government followed a different approach to rail reform and created four new rail authorities. FreightCorp, the Rail Access Corporation, and the Railway Services Authority are subject to the NSW Government tax equivalent regime and hence became liable to pay the extra taxes listed in table III.4. The new State Rail Authority, however, which operates the urban and country passenger services, is not included in the TER regime (Staun, D., SRA, pers. comm., 13 March 1997).

SAFETY ACCREDITATION

In April 1996, the Australian Transport Council endorsed the Intergovernmental Agreement on Rail Safety⁶ relating to interstate rail operations (Intergovernmental Agreement on Rail Safety: Notes on Administration 1996, Part 1). A national approach to rail safety will facilitate open access and competition on the interstate rail network by ensuring safety is not a barrier to the entry of third party operators.

The agreement provides for:

- safety accreditation of railway owners and operators;
- mutual recognition of accreditation between accreditation authorities,
- development and implementation of performance based standards.
- greater accountability and transparency.
- facilitation of competition and innovation consistent with safe practice.

Accreditation authorities will seek to implement the Agreement in a way that is efficient, seamless, and well coordinated between jurisdictions, so that the administrative requirements facing rail operators are minimised. This will require a 'one stop shop' approach to interstate safety accreditation. Rail operators will have to approach only one accreditation authority, and that authority will facilitate mutual recognition and liaison with the accreditation authorities in the other jurisdictions where the operator wishes to run trains.

⁶ All jurisdictions are parties to the Agreement except the ACT and the Northern Territory.

TABLE III.4 TAXES AND CHARGES PAID BY QUEENSLAND RAIL

<i>Taxes and charges</i>	<i>Does Queensland Rail Pay?</i>
Commonwealth	
Company income tax	Tax equivalent paid to Queensland Government
Sales tax	
• Items for resale	Yes, paid to Commonwealth
• Executive package cars	Yes, paid to Commonwealth
• Trucks and other non-rail business items	Tax equivalent paid to Queensland Government
• All other items	No, exempt as a public railway
Customs duty	Yes, paid to Commonwealth
Fringe benefits tax	Yes, paid to Commonwealth
Fuel excise	Yes, paid to Commonwealth
Superannuation and training levy	Yes, paid to Commonwealth
State government	
State fuel excise	None in Queensland ^a
Payroll tax	Yes
Financial institutions duty	None in Queensland
State debits tax	Yes
Stamp duty	Yes
Vehicle registration fees	Yes
Liquor licence fees	Yes
Land tax	
• Rail corridor land	No
• Non corridor land	Yes
Titles office fees	Yes
Loan guarantee fee	Yes
Local government	
General rates	
• Rail corridor land	No
• non-corridor land	Yes
Water and sewerage charges	Yes

^a On 5 August 1997, fuel franchise fees ceased to exist in all states and territories; appendix VII.

Source Price, R., Queensland Rail, pers. comm., 4 September 1997.

Table III.5 lists the accreditation charges that will apply in NSW. They are levied under the NSW *Rail Safety Act 1993*, and details of the fees determined by the Minister are published in the *NSW Government Gazette*.

The NSW Government will charge rail operators a flat fee when applying for accreditation, but the annual accreditation fees could be based on one or more of three factors: transport task (tonnage of freight or number of passengers), route kilometres of track, or units of rolling stock.

When fully implemented, the Agreement should provide significant cost savings to rail operators. Interstate rail operators currently face the costs of complying with different operational and safety requirements in each state plus a separate set of fees. NRC's payments to all states for safety accreditation currently total about \$250 000 per annum (Affleck, NRC, pers. comm, 3 September 1997).

TABLE III.5 NSW RAIL SAFETY ACCREDITATION FEES

<i>Item</i>	<i>Fee</i>
APPLICATION FEES FOR:	
Accreditation as owner or operator of a railway	\$250
Interim accreditation as owner or operator of a railway	\$5
Registration of a private railway siding	\$50
ANNUAL ACCREDITATION FEES ^a	
<u>Transport task</u>	
Freight	\$0.00893 per tonne
Passengers	\$0.00125 per passenger
<u>Track distance</u>	
Track Less than 5 km	\$100
Track 5 km to 20 km	\$250
Track over 20 km	\$250 for the first 20 km plus \$100 per each additional 10 km
<u>Rolling stock</u>	
Self propelled units	
Over 500 hp	\$200 per unit
Over 100 hp and less than 500 hp	\$100 per unit
Under 100 hp	\$50 per unit
Hauled vehicles	\$50 per unit
Track inspection vehicles	\$50 per unit

a Annual accreditation fees are based on one or more of three factors: transport task, track distance, or rolling stock.

Note Special rates apply to heritage railways and small railways.

Source Intergovernmental Agreement on Rail Safety: Notes on Administration 1996, part 6.

GOVERNMENT PAYMENTS TO RAIL

The deficit incurred by government trading enterprises on rail operations totalled just over \$1 billion in 1993-94 before receipt of subsidies from government (BTCE 1995a, pp. 13-72)⁷. The deficit was offset by payments from

⁷ A slightly higher rail deficit figure of \$1.4 billion is given in unpublished ABS government finance statistics (BTCE 1995a, p. 12). A number of factors account for the ABS figure being higher than the BTCE estimate, the major item being the inclusion of Victorian Government payments to the PTC for non-rail expenditure (BTCE 1995a, p. 14).

government of just under \$1.2 billion, comprising \$456 million for concession reimbursements and \$725 million for other purposes (table III.4), such as the funding of community service obligation services, and superannuation and redundancy costs associated with industry restructuring. The major part of the rail deficit resulted from urban and country passenger operations.

TABLE III.6 GOVERNMENT PAYMENTS TO RAIL 1993-94

<i>Jurisdiction</i>	<i>Concession reimbursements^a</i>	<i>Other purposes^b</i>	<i>Total</i>
NSW	387	200	587
Victoria	31	359	390
Queensland	22	-6	16
South Australia	3	51	54
Western Australia	9	83	92
Commonwealth	4	38	42
Total	456	725	1181

a A concession is a reduction in price for a specific group of customers such as pensioners or drought affected farmers.

b The other purpose payments include funding for community service obligation (CSO) services, plus payments from governments to help railways meet other costs, such as superannuation and redundancy costs associated with industry restructuring.

Source BTCE 1995a, pp. 13-72.

APPENDIX IV AVIATION

Taxes and charges levied on aviation are published in detail, partly because of the separation between operators and infrastructure providers, and partly because several government agencies are involved in providing infrastructure and services to the industry.

At the Federal level, taxes and charges are levied directly by, or for, the Federal Airports Corporation (FAC), Air Services Australia (ASA), the Civil Aviation Safety Authority (CASA), and the Department of Transport and Regional Development. In addition, some of their charges effect cost recovery on behalf of other organisations, such as, the Bureau of Meteorological Services, the Australian Protective Service (APS) security charge to cover the costs of counter terrorist first response security, the Australian Customs Service, and the Australian Quarantine Inspection Service (AQIS) (the last two being relevant only for international flights).

The Commonwealth Government is disposing of FAC airports by either leasehold or freehold sales. New operators took long term leases over Brisbane, Perth and Melbourne airports on 2 July 1997 and it is expected that another fifteen FAC airports will be sold by the end of the 1997-98 financial year. This will leave only the four airports in the Sydney basin under FAC control: Sydney, Bankstown, Camden and Hoxton Park airports (Anderssen, J., Aviation Policy, pers. comm., 8 September 1997). Discussion of FAC charges in the next section relates to its operating arrangements during 1996-97. The new airport owners may change charging arrangements during 1997-98.

FEDERAL AIRPORTS CORPORATION

The Federal Airports Corporation is owned by the Commonwealth Government of Australia but is governed by an independent board and is operated at arm's length, independent basis (FAC 1996, p. 1). The FAC pays dividends and tax to the Commonwealth (FAC 1996, p. 7).

The FAC's revenues totalled \$579 million in 1995-96, comprising: \$214 million from aeronautical charges, \$224 million from commercial trading (airport shops

and parking), \$121 million from property rentals, \$9 million from recharge⁸ of property service costs, and \$12 million from other sources.

FAC charges at capital city airports are levied for aircraft landings, the use of overseas or domestic terminals, aircraft parking and security services. The charges are summarised in table IV.1 and, except for the parking charge, are all based on aircraft weight.

At Sydney Airport only, there is also an additional charge for aircraft take-offs and landings during peak and shoulder periods (See table IV.2).

The charge for parking aircraft at capital city airports is \$11 per aircraft per day, or part thereof, with the first two hours being free for all aircraft parked in designated general aviation parking areas. Discounts on the parking charge are available for aircraft left in some circumstances (FAC 1997, p. 26).

TABLE IV.1 WEIGHT-BASED FAC CHARGES AT CAPITAL CITY AIRPORTS
(\$ per 1000 kg MTOW pro rata per landing)

Airport	Charge			
	General landing ^a	Domestic terminal infrastructure ^b	Terminal ^c	Security ^d
Sydney	5.72	2.32	2.48	0.45
Melbourne	5.72	0.73	4.07	0.44
Brisbane	5.72	np	2.62	0.50
Adelaide	4.98	2.14	1.05	0.78
Perth	5.72	1.50	2.80	0.86
Hobart	5.72	0.90	1.05	0.55

np Not published.

a General landing charge minimum \$27.50.

b Domestic terminal infrastructure charge paid in addition to general landing charge by regular public transport (RPT) aircraft over 20 000 kg maximum take-off weight (MTOW) using domestic passenger facilities not owned and operated by the FAC.

c Terminal charge paid in addition to the general landing charge by all aircraft using international passenger terminal facilities owned and operated by the FAC.

d Security charge paid per landing by all aircraft over 20 000 kg MTOW.

Source FAC 1997.

⁸ Recovery from tenants of costs for services, such as water, which are used by tenants but initially paid for by the FAC.

TABLE IV.2 FAC PEAK AND SHOULDER PERIOD CHARGES AT SYDNEY AIRPORT
 (\$ per take-off or landing)

<i>Sydney time</i>	<i>Landings</i>	<i>Take-offs</i>
Peak period ^a		
08.00-09.00	250	250
18.00-19.00	250	250
Shoulder period ^b		
07.30-07.59	200	100
09.01-10.00	200	100
17.00-17.59	200	100
19.01-19.30	200	100

a Peak period charges apply to all fixed wing aircraft operations on Mondays to Fridays inclusive, including public holidays on weekdays.

b Shoulder period charges apply on Mondays to Fridays inclusive, including public holidays on weekdays, to all fixed wing aircraft not operating RPT services.

Source FAC 1997.

Aircraft operating to non-capital city airports owned by the FAC pay a general landing charge (box IV.1) or, if they qualify, a GAIT charge (General Aviation Infrastructure Tariff). The GAIT charge allows unlimited use of facilities at the FAC's designated GAIT airports for the period covered by the charge. To qualify for GAIT charges, aircraft must meet the conditions outlined in box IV.2.

BOX IV.1 FAC LANDING CHARGES AT PROVINCIAL AIRPORTS

General landing charge

\$5.72 per 1000 kg of maximum take-off weight (MTOW) pro rata per landing.

GAIT charges

Subject to qualifying for general aviation infrastructure tariff (GAIT) charges (see box IV.2), the one GAIT charge allows unlimited use of the FAC's designated GAIT airports for the appropriate period. GAIT charges are calculated as \$5.34 per 1000 kg MTOW pro rata per day or part of a day, or, if paid in advance by purchase of labels:

1 month; \$112 per 1000 kg MTOW pro-rata.

6 months; \$490 per 1000 kg MTOW pro-rata.

12 months; \$702 per 1000 kg MTOW pro-rata.

Security charge

\$0.55 per 1000 kg MTOW pro-rata per landing for all aircraft over 20 000 MTOW.

(Applies only at Alice Springs, Coolangatta, Darwin, and Townsville airports.)

Domestic Terminal Infrastructure charge

\$0.90 per 1000 kg MTOW pro-rata per landing for regular public transport (RPT) aircraft over 20 000 kg MTOW using domestic passenger facilities not owned and operated by the FAC. (Applies only at Coolangatta airport.)

Terminal charge

\$1.05 per 1000 kg MTOW pro-rata in addition to the landing charge for aircraft using international passenger terminal facilities owned and operated by the FAC. (Applies only at Townsville Airport.)

- a Alice Springs, Archerfield, Bankstown, Canberra, Coolangatta, Darwin, Essendon, Jandakot, Launceston, Moorabbin, Mount Isa, Parafield, Tennant Creek, and Townsville airports.

Source FAC 1997.

BOX IV.2 AVIATION DEFINITIONS

MTOW. Maximum take-off weight of an aircraft as specified by the manufacturer.

RPT (Regular public transport) operations. Hire and reward air services carrying passengers or freight operating over fixed routes, between fixed terminals, and according to fixed schedules.

GAIT. General Aviation Infrastructure Tariff. To qualify for GAIT charges, aircraft must be:

- operated in a general aviation capacity, that is, not involved in RPT services, weigh 10 000 kg MTOW or less, and using the airports of Essendon, Canberra, Darwin, Launceston, Townsville, Alice Springs, Coolangatta, Mount Isa, or Tennant Creek, or
- operated in a general aviation capacity, or involved in regular public transport and weighing 10 000 kg MTOW or less, and using the airports of Bankstown, Hoxton Park, Camden, Moorabbin, Archerfield, Parafield and Jandakot.

Source FAC 1997.

AIRSERVICES AUSTRALIA

Airservices Australia (formerly part of the Civil Aviation Authority) is responsible for providing airways⁹ and rescue and fire fighting services to the civil aviation industry. The services are provided on a commercial basis and ASA levies charges to recover costs.

Background

Airservices Australia (ASA) established by the *Air Services Act 1995*. ASA is responsible for:

- control of air traffic and management of airspace.
- traffic and flight information, navigation services, and aeronautical services.
- rescue and firefighting services at airports.
- environmental regulation.

ASA provides these services within the Australian Flight Information Region (FIR) which covers Australian sovereign airspace plus adjoining international airspace on behalf of the International Civil Aviation Organization (ICAO). (ASA 1996a, p. 2).

⁹ Airways services comprise radio communications, electronic navigation aids, radar, and control tower operations.

ASA is funded from the charges paid by users of its services. Turbine aircraft pay en route and terminal navigation charges based on the weight of the aircraft and distance flown, while piston aircraft pay a fuel levy which is included in the price of avgas. ASA does not receive any funding from government (ASA 1996a, p. 12).

ASA revenue totalled \$580 million in 1995-96, comprising \$524 million from airways revenue, \$18 million from excises, \$9 million from safety services, and \$28 million from other sources (ASA 1996b, p. 45). Avgas aircraft pay excise of 17.403 cents per litre (table IV.8), of which 1.711 cents per litre goes to CASA leaving 15.692 cents per litre for Airservices Australia.

Provided its debt is kept sufficiently low to retain the confidence of lenders, Airservices Australia has found that the cost of paying dividends on equity is greater than the cost of paying interest on debt. A review of ASA's capital structure recommended a gearing ratio of 35 to 45 per cent (depending on the investment cycle). ASA made a capital repayment to Government in 1996-97 totalling \$49 million, giving a gearing ratio of just under 40 per cent (Lumsden, I., Aviation Policy, pers. comm., 11 August 1997).

In recent years, the rate of excise on avgas has been set to recover the marginal cost of services provided to avgas operators (piston engined planes). In 1995-96, the CAA Board was considering an increase of 4.15 cents per litre in the rate of excise to 19.5 cents per litre. However, after the aviation industry objected to the increase because of its depressed economic circumstances, the CAA Board suggested that government should consider an increase to only 16.7 cents a litre. This would involve forgoing a return on the assets used to service avgas aircraft. Government accepted the suggestion but the Senate later disallowed all increases and capped the Airservices component of the rate at the 1994-95 rate of 15.736 cents per litre (as adjusted annually by the CPI) (ASA 1996a, p. 38).

Current government policy is to cap the avgas excise charge for ASA except for any increases from CPI adjustments, which are implemented twice a year by Customs in August and February (see appendix VII). The CASA component of the avgas excise could, however, still increase (Lumsden, I., Aviation Policy, pers. comm., 11 August 1997). The current excise charges for avtur and avgas are given in table VII.2 in appendix VII.

ASA Charges

For the purpose of levying ASA flight charges, aircraft are classified as:

- avtur aircraft, that is, all aircraft running on aviation turbine fuel (avtur); or
- aviation gasoline (avgas) aircraft, comprising aircraft using fuels other than avtur.

The charges collected by ASA comprise:

- Terminal Navigation Charges (TNC), which cover aerodrome control, approach control, and terminal navigation aids (table IV.3). TNCs apply to avtur aircraft landing at airports where and when air traffic tower service is available (table IV.4), and to avgas aircraft landing at state capital city airports (but not Canberra or Darwin). TNCs do not apply to landings when air traffic control or RFFS services are not available. Airservices Australia is considering a proposal to charge location specific terminal navigation charges from 1 July 1998. This should result in prices reflecting the cost of providing the services at each location (Ansett Australia, pers. comm., 5 August 1997).
- Rescue and Fire fighting Charges (RFC) apply where and when the service is available to all aircraft (avtur and avgas) with a maximum take off weight (MTOW) of 2500 kg or more. The charge covers the cost of rescue and firefighting facilities at airports. From 1 July 1997, a standard network charge of \$1.80 per MTOW tonne for all airports was replaced with the location specific charges shown in table IV.5.
- En route charges (ERCs) cover airspace control and nav aids (table IV.6).
- Meteorological service charges (MSC) (table IV.6).

Meteorological service charges cover the cost of services provided by the Bureau of Meteorology to the aviation industry. The arrangements for cost recovery of aviation weather services were introduced in 1993-94. The Bureau sets the charge but, for administrative convenience, ASA provides a billing and revenue collection service on its behalf on a fee for service basis (Eliezer, J., Bureau of Meteorology, pers. comm., 22 September, 1997).

The Bureau calculates an annual charge that incorporates the cost of providing aviation weather services in the forthcoming financial year and an adjustment for any under or over recovery in the previous financial year. Each year, the estimates are agreed with the Australian Air Transport Association (AATA). The formula is similar to that used to calculate en-route charges. Estimated meteorological charges for 1996-97 totalled \$14.711 million.

The Bureau of Meteorology also provides meteorological services to shipping. Under the international SOLAS (Safety of Life at Sea) convention, meteorological services are required to be provided free by radio broadcast. In the future when satellite technology replaces radio communication, the Bureau may charge for more sophisticated information. However, basic weather information will continue to be provided free.

ASA also collects the noise levy at Sydney on behalf of the Federal Government. (ASA 1996a, p. 2). The noise levy is discussed later in this appendix.

TABLE IV.3 AIRPORT RELATED CHARGES LEVIED BY AIRSERVICES AUSTRALIA
(\$ per MTOW tonne per landing)

<i>Charge</i>	<i>Amount</i>
Terminal navigation charge	
Avtur aircraft landing at specified airports	5.19
Avtur aircraft within a control zone but not at a specified airport	2.60
Avgas aircraft at state capital city airports	5.19
Rescue and fire fighting: (Until 30 June 1997) ^a	1.80

a On 1 July 1997, the standard network charge was replaced with the location specific charges in table IV.5.

Source ASA 1996c, p. 5 and ASA 1997, p. 8.

TABLE IV.4 AIRPORTS WHERE AIRSERVICES AUSTRALIA CHARGES APPLY

Adelaide	Camden	Jandakot	Perth
Albury	Canberra	Launceston	Rockhampton
Alice Springs	Coffs Harbour	Mackay	Sydney
Archerfield	Coolangatta	Maroochydore	Tamworth
Bankstown	Darwin	Melbourne	Townsville
Brisbane	Essendon	Moorabbin	Wagga Wagga
Cairns	Hobart	Parafield	

Note A Terminal Navigation Charges (TNC) applies at all airports in the table for avtur aircraft and at capital cities for avgas planes.

Source ASA 1996c, p.13.

TABLE IV.5 RESCUE AND FIRE FIGHTING CHARGES FROM 1 JULY 1997
(\$ per MTOW tonne per landing)

<i>Airport</i>	<i>Charge</i>	<i>Airport</i>	<i>Charge</i>
Adelaide	2.46	Karratha	12.15
Alice Springs	5.78	Launceston	7.68
Brisbane	1.38	Mackay	9.52
Cairns	3.23	Melbourne	1.05
Canberra	2.83	Perth	2.72
Coolangatta	3.39	Port Hedland	15.90
Darwin	5.68	Rockhampton	8.68
Hobart	6.41	Sydney	0.69

Source ASA 1997, p. 11.

TABLE IV.6 EN ROUTE AND METEOROLOGICAL CHARGES

<i>Charge for:</i>	<i>Aircraft of 20 tonnes or less MTOW</i>	<i>Aircraft over 20 tonnes MTOW</i>
En route services	$\$1.21 * D / 100 * W$	$\$5.41 * D / 100 * \sqrt{W}$
Meteorological services	$\$0.05 * D / 100 * W$	$\$0.24 * D / 100 * \sqrt{W}$

Notes W = Maximum take off weight of aircraft in tonnes.

D = Distance travelled by aircraft measured by the great circle distance in kilometres, reduced by 55 km for each tower at the port of origin and destination. For international flights, distance is measured between the Australian airport of origin or destination and the point where the flight crosses the FIR boundary.

$\sqrt{\quad}$ = square root.

Source ASA 1997, pp. 13-15.

ASA levies additional charges for the provision or upgrading of facilities or services outside normal operating hours. The extra charges are \$70 for terminal navigation facilities at all locations and \$141 to \$715 per hour for firefighting services, depending on the location, the category of service, and the length of time outside standard hours. (ASA 1997, p. 9 and p. 12).

ASA charges penalty interest on outstanding debts, calculated at 1.5 per cent per month (ASA 1997, p. 24).

CIVIL AVIATION SAFETY AUTHORITY

The Civil Aviation Safety Authority (CASA) is a Commonwealth statutory authority responsible for regulating the safety of civil aviation for the benefit of the Australian public. CASA was formally established in July 1995 to take over the safety regulation functions of the former Civil Aviation Authority (CAA) (CASA 1996, pp. 13-14).

CASA's core business is to:

- secure adherence to safety rules, through effective compliance and enforcement strategies.
- set sound and appropriate rules and policy.
- control entry of new participants into the aviation system through licensing and certification.
- to encourage industry acceptance of its obligation to maintain high safety standards. (CASA 1996, p. 14).

Funding for CASA totalled \$86 million dollars in 1995-96 and is based on a 'beneficiary model' where the beneficiaries of aviation contribute to its costs (CASA 1996, p. 62). The beneficiaries comprise:

- the general public who fund CASA via a government appropriation;
- the travelling public who pay via excise on aviation fuels; and
- the aviation industry which pays via fuel excise and direct Regulatory Service Fees (CASA 1996, p. 62).

CASA's annual report for 1996 notes that its long term funding strategy has yet to be finalised (CASA 1996, p. 62).

CASA's Regulatory fees are published in the Commonwealth Gazette and include fees for safety audit programs, and miscellaneous other fees listed in attachment 1 at the end of this appendix.

Table IV.7 presents a breakdown of CASA's revenue for 1995-96 showing that receipts from excise and government payments accounted for \$90 million of its \$95 million in income. The excise rates on fuel and the respective shares going to ASA and CASA are shown in table VII.2 of appendix VII.

CASA earned \$2.9 million in 1995-96 from regulatory fees for issuing certificates of airworthiness, aerodrome licences, flight crew licenses, and miscellaneous other items. A list of the fees is given in appendix I.

Safety audit programs carried out by CASA for Ansett and Qantas generated income of \$1.2 million in 1995-96 (table IV.7). The amounts payable by each airline were published in advance in a notice in the Commonwealth Gazette (table IV.8).

TABLE IV.7 CASA REVENUE, 1995-96
(*\$ million*)

<i>Revenue item</i>	<i>Amount</i>
Fuel excises	55.0
Regulatory service fees	2.9
Safety Audit programs	1.2
Other revenue	1.5
Receipts from government	34.6
Total	95.2

Note CASA revenue from fuel excise for 1995-96 was \$9 million higher than budgeted, reflecting higher than expected growth in domestic airline activity (Keys, W., Aviation Policy, pers. comm., 19 September 1997).

Source CASA 1996, pp. 67-68.

TABLE IV.8 CASA FEES FOR SAFETY AUDIT PROGRAMS, 1995-96
(*\$000*)

<i>Operator</i>	<i>Charge</i>
Qantas Airways Limited	856
Ansett Transport Industries Limited	344

Source Statutory Rules 1995 No. 225, Civil Aviation (Fees) Regulations, Commonwealth of Australia Gazette, 6 July 1995, p. 2.

LOCAL AUTHORITIES

Most airports in regional centres are owned and controlled by local authorities, usually municipalities or shires, although Cairns Airport is owned by the Cairns Port Authority.

Each local authority is free to set charges as it sees fit. However, most charge a landing fee based on aircraft maximum take off weight (MTOW), a 'head tax' for passengers carried on commercial services, and a range of miscellaneous other charges.

Table IV.9 shows the head tax rates charged by the airports served by Ansett and associated airlines in 1997. Some airports charge the same rate for all passengers while others allow a discount for children.

The landing fees at selected airports are shown in table IV.10. Some authorities have a graduated schedule of landing fees, with heavier aircraft paying a higher rate per tonne. At Esperance, the rate is \$5 per tonne up to 15 tonnes, and \$20 per tonne for heavier aircraft.

Instead of paying for each landing, some authorities allow aircraft based at their airport to pay a fixed annual charge for unlimited use of facilities. Some also set special rates for charter aircraft and training flights, and a landing charge of \$5 per tonne (MTOW) applies at several centres for military aircraft. At least some airports give exemptions from landing fees to the police, the air ambulance, and non-profit organisations.

At Cairns, the landing fee is adjusted by a time factor. The basic landing charge is \$6.50 per tonne for international aircraft and \$3.50 per tonne for domestic services. A ten percent premium is imposed for landings between 11 pm and 3 am, and a five per cent premium is levied for aircraft arrivals between 9 pm and 11 pm at night or between 3 am and 5 am in the morning. The BTCE understands the extra charges were imposed as a noise control measure.

The miscellaneous charges applying at some centres are for aircraft parking, night operations and runway lighting, equipment hire, security services, the use of passenger terminals, and helicopter operations.

TABLE IV.9 DOMESTIC AIRCRAFT PASSENGER HEAD TAX, JUNE 1997

<i>Airport</i>	<i>Adult</i>	<i>Child</i>	<i>City</i>	<i>Adult</i>	<i>Child</i>
Albany	17.00	8.50	Inverell	10.00	10.00
Albury	7.00	7.00	Kalgoorlie	15.80	7.90
Armidale	11.00	11.00	Kempsey	8.00	8.00
Ayers Rock KD	12.00	6.00	Kingscote	4.00	2.00
Ayers Rock AN	18.00	9.00			
Ballina	8.50	3.00	Kununurra	10.00	5.00
Barcaldine	8.00	8.00	Laverton	8.00	4.00
Bourke	1.50	1.50	Learmonth	12.00	6.00
Broken Hill	8.00	4.00	Lismore ZL	6.00	6.00
			Lismore VQ	7.00	7.00
Broome	10.00	5.00	Longreach	8.50	4.25
Bundaberg	4.00	4.00	Mackay	7.00	3.75
Burnie	4.50	2.25	Maroochydore	10.00	10.00
Cairns	3.50	1.75	Merimbula	4.00	2.00
Carnarvon	4.00	2.00	Mildura	4.00	2.00
Casino	12.00	12.00	Moruya	4.00	2.00
Ceduna	8.80	5.30	Mt Gambier	5.00	2.50
Christmas Island	5.00	5.00	Narrandera	2.10	2.10
Cobar	4.00	4.00	Newcastle	4.00	4.00
Cocos Island	5.00	5.00	Newman	11.90	nil
Coffs harbour	5.50	5.50	Norfolk Island	18.30	18.30
Cooper Pedy	4.50	2.25	Orange	7.50	7.50
Cooma	9.00	9.00	Parkes	5.00	5.00
Denham	13.00	13.00	Port Lincoln	5.40	5.40
Devonport	4.50	2.25	Port Macquarie	7.20	7.20
Dubbo	5.00	5.00	Portland	9.20	4.60
Emerald	6.00	6.00	Proserpine	6.90	3.45
Esperance	12.00	6.00	Rockhampton	5.00	2.50
Geraldton	11.00	5.50	Tamworth	4.50	4.50
Gladstone	6.00	3.00	Thangool	6.00	6.00
Glen Innes	10.00	10.00	Toowoomba	1.00	1.00
Gove	7.00	3.00	Wagga Wagga	5.65	5.65
Hamilton Island	11.50	5.75	Whyalla	5.00	2.50
Harvey Bay	5.00	5.00	Wiluna	1.50	0.75

Notes Airports around Australia which are owned by local government authorities charge head taxes on passengers using those airports known as a domestic Head tax. The Domestic head Tax applies to both wholly domestic travel and domestic legs of an international journey. Infants under 3 and occupying a seat pay the applicable child level in all cities. The tax does not apply to airline staff or passengers affected by involuntary rerouting.

Source Ansett Australia, pers. comm, 24 June 1997 and 5 August 1997.

TABLE IV.10 LANDING CHARGES AT SELECTED REGIONAL AIRPORTS

(\$ per tonne MTOW)

<i>Airport</i>	<i>Avtur</i>	<i>Avgas</i>
Armidale	5.00	5.00
Ballina	4.00	4.00
Bathurst	12.00	6.00
Bundaberg	7.00	7.00
Dubbo	9.00	5.75
Esperance	20.00	20.00
Geraldton	8.00	8.00
Gladstone	3.00	3.00
Gove	5.00	5.00
Grafton	0.00	6.50
Leinster	5.00	5.00
Lismore	5.00	5.00
Orange	8.00	7.00
Pt Lincoln	6.60	6.60
Pt Macquarie	5.00	5.00
Proserpine	6.90	6.90
Tamworth	7.35	4.70
Taree	6.00	6.00
Weipa	8.00	5.00

Note The figures in this table were collected in a survey carried out by the BTCE in February 1997 to compile a data base for the Aerocost model.

Some airports have a graduated scale of fees with heavier aircraft paying a higher rate per tonne.

Source BTCE Aerocost Survey, 1997 (unpublished).

AIRCRAFT NOISE LEVY

Jet aircraft landing at Sydney pay a noise levy which is collected by Air Services Australia on behalf of the Department of Transport and Regional Development. The levy is collected under the *Aircraft Noise Levy Collection Act 1995* and totalled just under \$40 million in 1996-97. Airlines paying the levy seek to recover the costs by increasing the price for tickets (Cotton, M., Aviation Policy, pers. comm., 23 May 1997).

The terms of the legislation allow the noise levy to be collected at other airports in Australia but it is only collected for Sydney. (Although the BTCE understands the premium on late night landings at Cairns was imposed by Cairns Port Authority to mitigate noise.)

The levy is paid into Commonwealth Consolidated Revenue, but the terms of the legislation state that the levy can only apply until the amount collected is equal to the cost of the noise abatement scheme in Sydney, including interest, administration, and levy collection costs.

The cost of the levy for each type of jet depends on its noise characteristics and ranges from about \$100 to \$1200 per aircraft.

For individual aircraft, it is calculated as follows (ASA 1997, p. 16).

$$\text{Levy} = \$165.35 \times 2^{(\text{ANL} - 265)/15}$$

where ANL is the assessed noise level of the aircraft in decibels and is calculated as follows:

- For a jet aircraft of a type which has been certificated or measured in accordance with chapter 2 or chapter 4 of Volume 1 of Annex 16 to the *Convention on International Aviation*, the ANL is the sum of the lateral, flyover and approach noise measurements, plus 3.2 decibels.
- For a jet aircraft measured in accordance with chapter 3, the method is the same but without the addition of the 3.2 decibels.

STATE CHARGES

Two states charge licence fees for intrastate air passenger services: Western Australia and New South Wales.

In Western Australia the fee is payable pursuant to the *Transport Coordination Act 1966* for all aircraft licensed to conduct regular passenger transport operations within Western Australia. The purpose of the fee is to recover the cost of rural and regional airport infrastructure. The fee payable is one per cent of the gross earnings for passenger, freight and charter revenue earned within Western Australia, specifically for operations between any or all of the following places: Perth, Newman, Paraburdoo, Port Hedland, Broome, Kununurra, Karratha and Kalgoorlie. The state has advised airlines that the fee will be increased from one per cent to 1.5 per cent from 1 August 1997 (Ansett Australia, pers. comm., 5 August 1997).

In New South Wales, the fee is payable pursuant to the *Air Transport Act 1964*. The licence fee is 0.2 per cent of the gross intrastate earnings from the carriage of passengers.

THE PASSENGER MOVEMENT CHARGE

The Passenger Movement Charge was introduced on 1 January 1995 and replaced the Departure Tax which had been paid by international travellers since 1978. The material in this section is quoted from an unpublished review of the passenger movement charge commissioned by the Australian Customs Service (McAlister 1997).

The PMC is levied under the Commonwealth *Passenger Movement Charge Act 1978* and is designed:

to achieve full cost recovery for customs, immigration and quarantine processing at Australia's borders and the cost of issue of short-term visitor visas. (Second Reading Speech, *Departure Tax Amendment Bill 1994*, House of Representatives Hansard of 21 September 1994, p. 1295.)

While the PMC is designed to meet both the incoming and outgoing border processing costs at airports and seaports, it is levied only on

outgoing passengers (with 12 categories of exemption, including crew, transit passengers, children under 12 years, and diplomatic and consular representatives.) The rate of the PMC is \$27 per departing passenger and that amount represented the cost per departing passenger in 1993-94 of the estimated processing costs by the Australian Customs Service, the Department of Immigration and Multicultural Affairs (DIMA), and the Australian Quarantine and Inspection Service (AQIS) at international airports and of the costs of issuing short term visas by DIMA.

Although the rationale for PMC is cost recovery, it is a tax and the revenue collected under the PMC legislation is paid into consolidated revenue. The relevant costs by ACS, DIMA and AQIS are funded through the normal budget process each year.

In 1995-96 collections of the PMC totalled \$147.8 million. The Australian National Audit Office (ANAO) in its report Passenger Movement Charge: Australian Customs Service (Audit Report No. 1, 1996-97), assessed that this amount exceeded the relevant costs in that year by approximately \$19.1 million (or about 15 per cent) based on estimates provided by ACS, DIMA, and AQIS.

The ANAO said that the over-recovery was due to both lower costs of passenger processing and of issuing short-term visas and to higher than expected passenger departures. Some representatives of the airport and airline operators also suggested that the original cost estimates by the were rubbery. (Further research has been commissioned on the costs to be recovered.)

While the rationale for the PMC is cost recovery, it should be noted that the PMC is not a fee for service charge. For example, the fee is not levied on incoming passengers (although most pay the charge indirectly because more than 95 per cent of passengers who exit Australia also enter Australia). In addition, because it is levied at a uniform rate, it does not reflect the differences in cost at localities for border processing and short-term visa processing in Australia and overseas. Furthermore, the full charge is payable for all departing passengers including Australian citizens and residents who do not require visas to re-enter Australia.

QUARANTINE

There is a quarantine charge of A\$128 for each international air service arriving in Australia (IATA 1987, up-dated to 1997).

FOREIGN OPERATORS

Income Tax Legislation does not deal specifically with the earnings of overseas airlines in Australia. Many overseas airlines are covered by double taxation agreements (DTAs) between Australia and their country of residence, or by airline profits agreements. As a generalisation, airlines resident in countries covered by a DTAs are exempt from Australian income tax on profits derived from their operations in Australia.

For airlines resident in countries not covered by a DTA, the Tax Office will, in theory, collect tax on the profits earned from Australian operations. In practice,

the Tax Office uses the following formula to estimate profits derived from Australian operations.

Australian Taxable Income = Australian Receipts x World net Income/World Receipts.

World net income is calculated according to the principles used to determine taxable income under the *Australian Income Tax Assessment Act 1936*.

The same formula is used to calculate tax on profits earned by overseas operators from services provided to Australians on international and domestic routes. There are no special arrangements for taxing overseas airlines on profits earned from carrying domestic trade within Australia because they rarely operate on these routes, the 1989 pilots' strike being an exception (Australian Taxation Office, pers. comm., 23 May 1997).

Attachment I CIVIL AVIATION SAFETY AUTHORITY FEES

This appendix gives a list of the services for which CASA charges fees. The list is complete but the description of each service is summarised. For complete details, see Statutory Rules 1995 No. 225, Civil Aviation (Fees) Regulations, *Commonwealth of Australia Gazette*, 6 July 1995.

A specific fee was published in the Gazette for some services which is also shown in this list. For all other services, the fee is calculated at an hourly rate for the time taken to provide the service. The hourly rate is the actual cost to CASA for consultancy services or \$75 per hour for other services.

Safety audit programs

See table IV.8 above.

Certificate of Airworthiness

- 1.1 Issue of airworthiness certificates or export certificates of airworthiness
- 1.2 Approval of foreign airworthiness certificates or export certificate of airworthiness

Approvals

- 2.1 Issue of certificate of type approval
- 2.2 Accreditation of a synthetic trainer
- 2.3 Issue of a certificate of approval
- 2.4 Assessment of a training course conducted under a certificate of approval

Manufacture and maintenance approvals

- 3.1 Approval of aircraft components; repair, design, or modification
- 3.2 Approval of maintenance systems
- 3.3 Approval of a maintenance schedule for aircraft
- 3.4 Approval of a permissible unserviceability or minimum equipment list
- 3.5 Certification of maintenance for aircraft operations overseas
- 3.6 Conducting a metallurgical examination or investigating a defective component

Aerodrome licences

- 4.1 Issue of an aerodrome licence
- 4.2 Annual obstacle survey of aerodrome

Air operator's certificates

- 5.1 Issue of an air operator's certificate

Airworthiness authorities

- 6.1 Issue of an airworthiness authority
- 6.2 Issue of an aircraft welding authority

Airworthiness examinations

- 7.1 For an aircraft maintenance engineer licence (fee varies with subject)
- 7.2 For an authority to conduct non-destructive testing (\$190)
- 7.3 For a welding or weight control authority
- 7.4 Provision of a critique for an examination in essay format for an aircraft maintenance engineer licence
- 7.5 Re-mark of an examination for licence for aircraft maintenance engineer (fee varies with subject).

Aircraft maintenance engineer licence

- 8.1 Issue of AME licence (\$205)
- 8.2 Renewal or reissue of an AME licence (\$60)
- 8.3 Issue of type endorsements on an AME licence (\$110 for first endorsement, then \$20 for each additional endorsement)

Flight crew examinations

- 9.1 Private pilot licence (\$45)
- 9.2 Commercial pilot licence (\$50)
- 9.3 Air transport pilot licence (\$100)
- 9.4 Student flight engineer licence (\$75)
- 9.5 For endorsement for instrument flying, flight instructor rating, or agricultural pilot licence rating (\$65)
- 9.6 For appointment as check flight engineer
- 9.7 A flight crew licence examination conducted by means of a flight test
- 9.8 Re-mark of a multi-choice format flight crew examination (\$70)

Flight crew licence

- 10.1 Issue of a private pilot licence and a flight radio operator licence (\$25)
- 10.2 Issue of a commercial pilot licence and a radio operator licence (\$45)
- 10.3 Issue of a transport pilot licence (\$60)
- 10.4 Issue of a flight engineer licence (\$55)
- 10.5 Issue of a certificate of validation for (a) private operations, (b) commercial operations. ((\$ fee varies with type of certificate)
- 10.6 Issue of a special pilot licence (\$50)
- 10.7 Issue or renewal of a flight crew rating (\$10)
- 10.8 Issue of an aircraft endorsement on a flight crew licence (\$15)
- 10.9 Issue of an aircraft endorsement on the basis of an overseas endorsement (\$20)

Flight manuals

- 11.1 Preparing or approving a new or altered flight manual

Consultancy advice and other services

12.1 Provision of advice on request

12.1 Assessment of a training program for maintenance personnel

APPENDIX V COMMONWEALTH TAXES AND CHARGES ON SHIPPING

Cost recovery charges are levied on shipping by at least four Commonwealth agencies: the Australian Maritime Safety Authority (AMSA), the Australian Customs Service, the Australian Quarantine and Inspection Service (AQIS), and the Department of Immigration and Multicultural Affairs. Some of the charges levied by Customs and AQIS are directed at shipping operations as such, while others are cargo-based and are paid by importers or exporters.

Shipping also pays the normal taxes faced by private sector Australian firms, albeit with special arrangements for foreign ships in respect of company tax and fuel excise (fuel excise is discussed in appendix VII).

The only maritime assistance payments currently made by the Commonwealth relate to the domestic passenger and freight services operating across Bass Strait between Tasmania and the mainland. Until 1996, however, the Commonwealth also operated programs to assist Australian ship operators acquire modern ships and to compete in international trades.

AUSTRALIAN MARITIME SAFETY AUTHORITY

The Australian Maritime Safety Authority (AMSA) was set up in January 1991 to improve the efficiency of service delivery in the areas of maritime safety and protection of the environment (Price, P., M-Pol, pers. comm., 13 May 1997). From July 1995, AMSA ceased to be classified as a Government Business Enterprise for the purposes of corporate governance, defining its prime objective and function as a safety agency (AMSA 1996b, p. 5).

AMSA's services are mainly provided on a cost recovery basis, with funding from fees, levies and, to a lesser extent, payments from the Commonwealth Government for Community Service Obligation (CSO) operations. CSOs cover search and rescue, maritime safety communications and boating safety education (AMSA 1996b, p. 7).

- the search and rescue facility is funded as a CSO while AMSA recovers the extra costs of actual search operations from the government by monthly invoice.

- AMSA pays about \$6 million per annum to Telstra to operate the coastal communications system, of which about \$3 million is funded as a CSO and the remainder recovered from commercial shipping (Harnischfeger, J., AMSA, pers. comm., 12 September 1997).

The three main levies collected by AMSA are:

- the Marine Navigation Levy to cover the capital and operating costs of the marine navigation networks.
- the Marine Navigation (Regulatory Functions) Levy to meet the costs of safety and regulatory activities.
- the Protection of the Sea Levy to meet the capital and operating costs of the National Plan for marine pollution response (Price, P., M-Pol, pers. comm., 13 May 1997).

The Marine Navigation Levy and Marine Navigation (Regulatory Functions) Levy are collected together and paid by commercial vessels of 24 metres or more in length. The levies are based on net registered tonnage and follow a sliding scale. The greater the tonnage, the lower the rate per ton (see tables V.1 and V.2).

Coastal vessels pay the levy quarterly and foreign ships pay on arrival at any Australian port. Foreign ships making later calls at Australian ports pay the levies only once in each three month period.

The Protection of the Sea Levy is paid by commercial vessels of 24 meters or more in length with 10 tonnes or more of fuel in bulk and is charged on a flat rate per net registered ton (NRT). As with the Marine Navigation Levy, the Protection of the Sea Levy is paid quarterly, with foreign vessels paying once in every three month period.

In 1995-96, AMSA's total revenue totalled \$65.4 million, comprising \$45.5 million collected from the shipping industry in levies and \$9.15 million from the Commonwealth for community service obligation functions (AMSA 1996b, p. 5). Other major items of revenue involving charges on industry include the following amounts collected in 1995-96 (AMSA 1996b, p. 105):

- marine services, (inspection of ships, etc), \$3 million. AMSA carries out inspections on ships' hulls, equipment and machinery as required by the *Navigation Act*. Inspections are carried out on new ships and then at regular intervals (Clements, E., AMSA, pers. comm., 12 September 1997).
- crew services: \$1 million. AMSA provides an employment service for ratings, the Seamen's Engagement Scheme, in accordance with the *Maritime Industry Seagoing Award 1983*. The service is funded by the Australian Maritime Industry Limited on a cost recovery basis (AMSA 1996b, p. 94). The Report by the Shipping Reform Group recommended that Seamen's engagement scheme be terminated (Shipping Reform Group 1997, p. 8).
- ship registration \$539 000.
- recovery of pollution incident costs and plant hire, \$966 000; ships causing pollution are billed for the clean-up operation.

Each area of AMSA has a schedule of fees for services provided to industry. The \$539 000 from ship registration comes from operating the Australian register of ships and from registry related activities. (Eliason, A., AMSA, pers.

comm., 12 September 1997). AMSA has set fees for 26 registry services including:

- Registration of ships: \$1195 for Australian trading vessels over 24 metres, \$1953 for foreign ships on demise charter to Australian operators, and \$799 for pleasure craft and fishing vessels and other craft for which registration is optional.
- Changing the name of a registered ship or its home port (\$82).
- Issuing a certificate of entitlement to fly the Australian flag or the red ensign (\$82).
- Lodging documents for a mortgage: \$418 for Australian ships over 24 metres, \$686 for foreign ships on demise charter to an Australian operator, and \$250 for pleasure craft and fishing vessels.
- Discharging a mortgage (\$82).
- Lodging a caveat (\$153).
- Inspecting the register in relation to a registered ship (\$21)
- Supplying certified copies of registry entries or documents (\$21 by post or \$42 by facsimile and post).

The Marine Operations and Personnel area charges ships' officers pay a once off fee of \$127 for a certificate of competency (Briggs, J., AMSA, pers. comm., 12 September 1997).

Tables V.1 and V.2 give details of the of the Marine Navigation Levy and the Marine Navigation (Regulatory Functions) Levy. The Protection of the Sea (Marine Pollution) Levy is 3.3 cents per net registered ton (AMSA 1996a).

TABLE V.1 AMSA LEVIES FOR MARINE NAVIGATION AND REGULATORY FUNCTIONS
(Cents per net registered ton per quarter)

<i>Ship size (Net registered tons)^a</i>	<i>Marine Navigation levy</i>	<i>Marine Navigation (Regulatory Functions) levy</i>	<i>Total</i>
1 to 5000	42.0	14.5	56.5
5001 to 20 000	33.5	14.0	47.5
20001 to 50 000	12.5	12.0	24.5
Over 50 000	5.5	11.5	17.0

a See box V.1 for a definition of registered tons.

Note The marginal rates for ships over 20 000 tons were reduced on 1 July 1997. Table V.2 shows the total amount payable for both levies.

Source AMSA 1996a and Harnischfeger, J., AMSA, pers. comm., 17 September 1997.

TABLE V.2 TOTAL AMOUNTS PAYABLE FOR AMSA MARINE NAVIGATION AND REGULATORY FUNCTIONS LEVIES

<i>Ship size (Net registered tons)^a</i>	<i>Total Payment</i>
1 to 5000	56.5 cents per ton
5001 to 20 000	\$2825 + 47.5 cents per ton over 5000 tons
20 001 to 50 000	\$9950 + 24.5 cents per tonne over 20 000 tons
Over 50 000	\$17 300 + 17.0 cents per ton over 50 000 tons

a See box V.1 for a definition of registered tons.

Source AMSA 1996a.

TABLE V.3 AMSA REVENUES, 1995-96

	<i>(\$'000)</i>
<i>Revenue item</i>	<i>Amount</i>
Marine navigation levy	30 475
Regulatory functions levy	11 715
Protection of the sea levy	3 345
Services provided on behalf of government	9 147
Other receipts from government	1 287
Marine services	3 031
Crew services	1 067
Interest	968
Recovery of pollution incident costs & plant hire	966
Ship registration	539
Other revenue	2 792
Total	65 332

Source AMSA 1996b, p. 105.

BOX V.1 TONNAGE MEASUREMENT

Shipping charges are often based on the 'registered tonnage' of vessels. Registered tonnage is a measure of the internal volume of a ship available to carry cargo, measured in units of 'tons' equal to 100 cubic feet.

Gross registered tonnage is the ship's internal volume excluding space in a double bottom, in tanks used exclusively for water ballast, in an open ended, bridge or forecastle, and certain light air spaces and skylights, anchor and steering spaces, wheel house, toilets and certain passenger spaces.

Net registered tonnage is gross tonnage less spaces for officers and crew, chart room and a percentage of the machinery spaces.

The measurement of registered tonnage is a complicated process, subject to detailed rules and regulations. For example, car carriers are measured under the 'shelter deck exemption concept', under which the entire upper 'tween decks' are exempted from the gross tonnage, even though the area can be utilised for cargo without risk to sea and weather damage. Shelter deck space is any space which is above the first deck to the hull (as defined by the tonnage rules).

Source D'Arcangelo 1969, p. 60.

COMPANY TAX ON FOREIGN SHIPS

The tax treatment of earnings by foreign ships in carrying Australian trade are explicitly defined in Division 12 (Overseas Ships) of the *Income Tax Assessment Act 1936*. Section 129 states that:

Where a ship belonging to or chartered by a person *whose principal place of business is out of Australia* carries passengers, livestock, mails or goods shipped in Australia, 5 per cent of the amount paid or payable to him in respect of such carriage, whether the amount is payable in or out of Australia, shall be deemed to be taxable income derived by him in Australia.

In practice, this means that foreign ship operators pay company tax on five per cent of the revenue collected for freight loaded in Australian ports. Section 129 covers only freight loaded in Australian ports, and does not apply to earnings from carrying Australian imports.

Double taxation agreements generally provide for profits from international shipping to be taxable only in the country of residence of the operator. This means that Section 129 does not apply to outbound international cargoes carried by shipping operators resident in an agreement country.

Section 129 does apply, however, to cargo picked up in an Australian port and discharged at an Australian port. This is because most DTAs provide that profits derived from coastal operations are subject to tax. Accordingly, foreign operators generally have to pay company tax on five per cent of revenue earned carrying domestic cargoes between Australian ports as provided for in Section 129 of the *Income Tax Assessment Act*.

Australia has signed double tax agreements with 36 countries. These agreements are contained in the *International Tax Agreements Act 1953* as schedules to the Act.

There are several exceptions to this treatment:

- The DTAs for Thailand and Kiribati allow both countries to tax income from outbound international cargo and coastal trading, with Australia and the other country being obliged to reduce tax by 50 per cent.
- The DTA with Sri Lanka provides for a 50 per cent reduction in tax on outbound international cargo provided Sri Lanka does not negotiate a lower reduction with a third state in which case that rate will apply.
- Ship operators based in Korea or the United Kingdom do not pay tax on revenue earned from carrying cargo around the Australian coast. Rather, their DTAs make them subject to tax in their home country only. However, these DTAs preserve the application of Section 129 where the voyage of operation of the ship is confined solely to places in Australia. (That is, where the foreign ship is operating solely on the Australian coast, rather than carrying coastal cargo as part of a longer international voyage.)
- The DTA with the Philippines provides for tax not to exceed 1.5 per cent of gross revenues from outbound international cargo or a lower percentage that the Philippines negotiates with a third state in which case that rate will apply.

QUARANTINE

AQIS is responsible for clearing ships which come to Australia and for the cargoes that they carry. AQIS responsibilities in relation to shipping are set out in the *Quarantine Act 1908* which stipulates requirements as to the health of crew, potential quarantine risks, and the sanitary condition of the vessel before a pratique³ may be issued (Price, P., M-Pol, pers. comm., 13 May 1997).

Vessel Clearance

AQIS inspects all foreign vessels on their first visit to Australia. If the inspection is satisfactory, the ship is placed on a 'random inspection' list, which results in inspections for about a third of their subsequent visits. If the vessel fails the inspection, follow up inspections are made on subsequent visits, and it is not placed on the random inspection list until it has passed three consecutive inspections.

The current schedule of AQIS fees is:

- Issuing a pratique without an inspection: \$114 per vessel.
- Issuing a pratique with inspection: \$456 for the first 90 minutes, plus \$114 for the next 30 minutes, and \$57 per 15 minutes thereafter, plus any overtime costs.

³ Licence to have dealings with a port, granted to a ship after quarantine or after showing a clean bill of health.

Container Clearance

Charges for container clearance are agreed with industry through the AQIS Industry Cargo Consultative Committee and depend, in part, on aggregate AQIS costs and the level of container movements. For the 1996-97 Budget, AQIS estimated container movements at 820 000 for the year and set container clearance charges at \$6 for a 20 foot (6.1 metre) box and \$12 for a 40 foot unit. These rates were not sufficient to cover costs in the first half of the financial year and AQIS carried out a mid-year review, then introduced a new rate of \$10.50 per box as from 1 January 1997.

Container clearance charges are set at a level sufficient to cover the costs of clearing containers, plus the costs of AQIS activities for which there is no client to whom bills can be sent. These include surveillance of wharves, providing information to industry and importers, producing publicity material, negotiating with overseas governments, and the development of new clearance systems. AQIS surveillance activities have not been funded by Government since 1 July 1996.

Other

AQIS operates under at least twenty two acts items of legislation under which it levies a range of taxes and charges, additional to those outlined above, for inspection of exports and imports to ensure that they meet required standards. Most, if not all, of these other taxes and charges are 'cargo-based', that is, they are payable by exporters or importers rather than transport operators.

CUSTOMS

The Australian Customs Service (ACS) does not normally levy any charges for its 'border control' activities carried out at 'normal' locations and in 'normal' working hours. Border control activities involve the inspection of ships and cargo for community protection purposes and are fully funded by the Commonwealth. To comply with border control requirements and to remain exempt from charges, shipping lines must lodge an electronic copy of their manifest with the ACS. Any line opting to lodge hardcopies of the manifest must pay a charge (Price, P., M-Pol, pers. comm., 13 May 1997).

The ACS will, however, levy charges on shipping lines where it is required to work:

- at places other than ACS appointed ports, wharves or depots, or ACS appointed warehouses.
- at times outside ACS hours of business; or
- as part of the provisions commencing on 1 April 1997, at depots licensed in remote localities.

Importers must also pay charges to cover the costs of clearing imports through customs.

PASSENGER SHIPS

A passenger movement charge is paid by passengers departing Australia by ship. Passengers on cruise ships pay the charge only once, even if the ship calls at more than one port on the Australian coast.

Further details of this charge are given in appendix IV on aviation taxes and charges.

SINGLE VOYAGE PERMITS

The *Navigation Act 1912* requires coastal trade to be carried in Australian ships whenever possible. A foreign ship may be licensed to operate on the Australian coast provided it complies with certain conditions including that its crew is paid Australian wages, it is not in receipt of subsidies from foreign governments, and it complies with Australian safety standards, as specified in the *Navigation Act*.

A single voyage permit (SVP) may be issued to allow a non-licensed, foreign ship to trade between state and territory ports where:

- no licensed ship is available for the service; or
- the service carried out by a licensed ship or ships would be inadequate to meet the needs of a port or ports; and

the Minister is satisfied that it is desirable in the public interest that unlicensed ships be allowed to engage in the trade.

For tankers and dry bulk ships, applications for SVPs must also be supported by inspection reports showing the vessel to be in good condition and a letter from the charterer stating that the ship is satisfactory for the intended voyage. Further details are given in *Guidelines for Granting Permits to Engage in the Australian Coasting Trade 1990*.

Single voyage permits are issued by the Department of Transport and Regional Development. The charge is normally \$403 per SVP application, or \$806 per application for urgent processing where the Department gives a decision on the application by the close of business on the day after the application is received (Phillis, J., M-Pol, pers. comm., 28 August 1997).

Provision also exists to issue continuing voyage permits (CVPs) for a fee of \$2000. No CVPs have ever been issued (Phillis, J. M-Pol, pers. comm., 12 September 1997).

GOVERNMENT PAYMENTS

This section outlines the Commonwealth Government's programs to assist ship operators and customers of the shipping services across Bass Strait.

Shipping Subsidies

Until 1996-97, Australian flag shipping benefited from two subsidy schemes operated by the Commonwealth Government (Beresford-Wylie, A., M-Pol, pers. comm., 31 July 1997).

Under the *Ships (Capital Grants) Act 1987* the Government paid a taxable grant equal to seven per cent of the purchase price on newly commissioned ships

delivered to Australian owners and registered in Australia. The aim of the legislation was to facilitate a reduction in crew sizes in the Australian fleet by encouraging the acquisition of modern ships. The grant was paid on both new-built ships and second hand ships which met the reduced crew numbers requirement.

To qualify for a grant, the owner had to retain the ship for at least five years - or else make a pro rata repayment of the grant if it were sold earlier - and crew it entirely with Australian resident seafarers.

Ships qualifying for assistance under the Act also benefited from an accelerated depreciation allowance, and could be written off over five years, rather than their normal economic life. The legislation allowed ship owners to begin claiming depreciation for the year before commissioning concurrently with the first year of service. In practice, the vessels were usually depreciated over four years, 40 per cent in year one and 20 per cent in each of the following three years.

The *Shipping Grants Legislation Act 1996* ended the ships grants. The last ships receiving assistance under the program were scheduled to come into service in the latter half of 1996-97 and will continue to benefit from accelerated depreciation.

Ship operators have also received taxable grants under the *International Shipping (Australian Resident Seafarers) Grants Act 1995*. The grants were equivalent to the notional value of the income tax paid by crew members on Australian ships engaged predominantly in overseas trade (that is, more than fifty per cent of operating service time in the financial year). The subsidy was intended to make Australian ships more competitive with merchant shipping from other countries which can recruit crews from low wage-cost countries. The International Shipping Grants were also terminated by the *Shipping Grants Legislation Act 1996*, so that the Commonwealth Government no longer provides any financial assistance to ship operators. Some equity linked measures for shipping were, however, recommended in the report of the Shipping Reform Group, concerning payroll tax, accelerated depreciation, and company tax (Shipping Reform Group 1997, appendix F). The Government has not yet responded to the report.

Tasmanian Freight Equalisation Scheme

The Tasmanian Freight Equalisation Scheme (TFES) is a Commonwealth program giving financial assistance for non-bulk cargoes shipped between Tasmania and the mainland (Harris, C., M-Pol, pers comm., 11 August 1997). The scheme was introduced in 1976 and, following an inquiry by the Inter-State Commission, reorganised into its present form in 1985. Assistance payments are made direct to freight consignors, not to the shipping lines. Details of the Scheme are given in *TFES: Ministerial Directions 1997*.

The aim of the Scheme is to offset the comparative interstate transport cost disadvantage suffered by Tasmanian industry in shipping non-bulk cargoes to and from Tasmania by sea.

The Scheme comprises a northbound component and a southbound component, each with separate eligibility criteria. Northbound TFES assistance

is paid on goods produced in Tasmania for use or sale on the mainland. Southbound TFES assistance is paid on raw materials or equipment of Australian origin, shipped to Tasmania for use as inputs by miners, manufacturers, or primary producers.

Cargoes not eligible for TFES assistance include:

- cargoes carried in bulkships (although cargo in bulk containers qualifies).
- air cargo, except when industrial disputes stop shipping operations.
- Tasmanian export cargoes shipped to the mainland for transshipment overseas.
- goods of overseas origin landed at Australian mainland ports for transshipment to Tasmania, unless they undergo some further manufacturing on the mainland.

In 1996-97, TFES assistance payments totalled \$41.2 million, comprising \$32.1 million and \$9.1 million respectively for the northbound and southbound components of the scheme.

The administrative directions for the scheme specify rates of assistance for each type of cargo unit in use on Bass Strait (for example, 6 metre containers and 12 metre trailers), and for less than full container load consignments. Special rates of assistance apply for some commodities: timber, newsprint, zinc, apples, livestock, and high density commodities. Table V.4 shows selected TFES rates for full cargo units.

TABLE V.4 SELECTED TFES RATES OF ASSISTANCE
(*\$ per cargo unit*)

<i>Cargo unit</i>	<i>High density goods</i>	<i>Livestock</i>	<i>All other goods</i>
6 m container	325	550	590
12 m container	660	a	1190
12 m trailer	410	1020	940

a The Directions do not give an assistance rate for livestock shipped in 12 meter containers.

Source TFES: Ministerial Directions 1997, Schedule 2.

There are two provisions in the TFES Directions which may reduce the amount of assistance paid to individual claimants: the minimum payment rule and discounts to large shippers.

Under the discount provisions of the scheme, any individual claimant receiving \$300 000 in TFES assistance in a financial year has subsequent payments in that financial year discounted by 10 per cent. A 20 per cent discount applies after an individual's total TFES assistance reaches \$1 million. At the beginning of each new financial year, all large claimants revert to receiving the full assistance rates again.

Under the minimum payment rule, shippers only receive the full amount of assistance on each consignment if the difference between the wharf-to-wharf freight rate and the recommended rate of assistance (the net freight cost) is equal to or greater than a minimum amount specified in the Ministerial

Directions. If this difference is less than the specified minimum, the assistance payment is reduced by 50 cents in the dollar for each dollar that minimum payment amount exceeds the net cost. The minimum payment amount for each consignment depends on the type of cargo unit, the commodity, and the route of shipment.

Fuel excise offset

In October 1993, the Commonwealth Government announced that it would provide \$2 million per year over the next four years to alleviate the impact on Tasmanian shipping costs of the 1993-94 budget increase in fuel oil excise (Harris, C., M-Pol, pers. comm., 11 August 1997). The package was split between the Tasmanian Freight Equalisation Scheme and the Bass Strait passenger service, and came into effect on 1 September 1993.

TFES assistance payments were increased by 5 per cent, equal to about \$1.7 million per annum at that time. Though announced as a four year measure, the increase in TFES rates has not been reversed, nor has provision been made to revert to the previous payments. The Minister for Transport and Regional Development has, however, asked the Tasmanian Freight Equalisation Scheme Review Authority to carry out a review of TFES rates of assistance. A draft report is to be completed by December 1997 with a final report to the Minister by 1 March 1998 (Department of Transport and Regional Development 1997, Media Statement TR70/097).

The annual balance of the \$2 million was paid to the Bass Strait passenger service under an agreement between the Commonwealth and Tasmanian Governments. The agreement was made on 16 March 1995 and, is set to terminate on 31 August 1997. Payments are made quarterly at the rate of 3 cents per litre of the estimated amount of fuel used by the ferry passenger operations. The agreement provides that payments will be limited to \$50 000 in 1997-98.

Bass Strait Passenger Vehicle Equalisation Scheme

Under the Bass Strait Passenger Vehicle Equalisation Scheme, the Commonwealth Government pays a rebate on the fare charged to ferry passengers taking a car across Bass Strait (Harris, C., M-Pol, pers. comm., 11 August 1997). The policy aims of the Scheme are to remove the interstate transport cost disadvantage faced by Tasmanians and to encourage tourism to Tasmania.

The empirical aim of the scheme is to pay assistance such that the net cost of taking a car across Bass Strait approximates the cost of driving a similar distance on the highway. The subsidy is calculated as the difference between the ferry fare for a passenger⁴ with a car, and the estimated cost of driving 427 kilometres, the distance between Devonport and Melbourne⁵ (at 39.87 cents per kilometre, the estimated the cost for an average family saloon).

⁴ The standard shared cabin accommodation rate.

⁵ Measured between their pilot pick-up points.

The subsidy rates currently payable for a round trip are:

- \$300 in the peak season (14 December to 25 January).
- \$240 in the shoulder season (28 September to 13 December and 26 January to 12 April).
- \$200 in the off-peak season (13 April to 27 September).

The government initially estimated that rebates would cost \$7.5 million in 1996-97 (the first year of operation) and \$8.5 million per annum in later years. Since the scheme started, however, there has been an increase in demand for travel, with passenger vehicle numbers increasing from an estimated 73 000 for 1996-97 to an actual level of 80 000, a 22 per cent increase. Since funding for the scheme is demand driven, the estimated cost for 1997-98 has been increased to \$10.9 million.

The rebate is provided to the drivers of cars taken on the ferry via a reduction in the fare charged by the operator. The Commonwealth then reimburse operators each month. Two companies⁶ operate ferry services in Bass Strait, but the scheme would apply equally to any new operator who entered the trade.

⁶ TT Line operates the *Spirit of Tasmania* between Devonport and Melbourne and Southern Shipping operates the *Matthew Flinders* between Flinders Island and Victoria.

APPENDIX VI STATE AND LOCAL TAXES AND CHARGES ON SHIPPING

At the state level, ship operators face a plethora of taxes and charges levied by state governments, port authorities, and private sector service providers. An indication of the situation is given in table VI.1 which summarises charges in force at some capital city ports for container ships. Definitions of the taxes and charges are given in box VI.1.

There are fifty or more ports around the Australian coast, some of which specialise in bulk cargo, and table VI.1 gives only a simplified picture of the charging regime. Mainly for this reason, this appendix has focussed only on charges at the major ports of Melbourne, Sydney, Brisbane and Fremantle. In some ports, pilotage, towage (tug boats), and mooring/unmooring services are provided by private sector firms, but regulations promulgated by state or port authorities usually define the conditions of their use and effectively require them to be hired by trading vessels of any significant size. The other ship and cargo based charges levied by states and port authorities are compulsory or unavoidable.

MELBOURNE

During 1996-97, ships sailing into the Port of Melbourne dealt with three government authorities plus private sector suppliers. The three government bodies were the Victorian Channels Authority, the Port of Melbourne Corporation, and Melbourne Port Service. The three were set up to take over the role of the Port of Melbourne Authority.

In 1997-98, the number of government bodies had fallen to two. Melbourne Port Services Pty Ltd was a subsidiary of the Port Corporation but it was sold to Skilled Engineering Ltd and began trading as Skilled Melbourne Port Services Pty Ltd on 1 July 1997.

TABLE VI.1 PORT AND RELATED COSTS FOR CONTAINER SERVICES

<i>Charge</i>	<i>Brisbane</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Adelaide</i>	<i>Fremantle</i>
Ship-based charges					
Conservancy ^a	✓	----	----	✓	✓
Tonnage ^b	----	✓	✓ ^c	✓	✓
Pilotage	✓	✓	✓	✓	✓
Towage	✓	✓	✓	✓	✓
Mooring & unmooring	✓	✓	✓	✓ ^a	✓
Berth hire	----	----	✓	----	----
Site occupation		✓			
Cargo-based charges					
Wharfage	✓	✓	✓	✓	✓
Harbour dues	✓	----	----	----	----
Berth charge	----	----	----	----	✓

a There is a Navigation Service Charge in Adelaide taken as equivalent to a conservancy charge.

b Tonnage is called Navigation service charge in Sydney, Channel use charge in Melbourne, and Harbour use charge in Adelaide.

c Channel use charge.

d Included in tonnage charge (known in Adelaide as the harbour service charge).

✓ Denotes charge applies.

---- Denotes charge does not apply.

Source BTCE 1996c, p. 13.

The Victorian Channels Authority

The Victorian Channels Authority levies a charge of 35.5 cents per gross registered ton on the inward voyage of ships sailing across Port Philip Bay⁷. The charge covers the cost of navigational services, such as lights. The charge was set by the Victorian Treasury with advice from Fay Richwhite (Victorian Channels Authority, pers. comm., 9 September 1997).

Melbourne Port Services

Skilled Melbourne Port Services provides several minor services to ships, such as phone connection, water, rubbish removal, and docking (moorings and unmooring ships). The most expensive MPS service is probably \$1000 for mooring and unmooring a ship, compared to tug charges of about \$6000 (Barker, B., MPS, pers. comm., 26 September 1997). The BTCE understands

⁷ Until June 30 1997, the price was 40 cents per GRT.

that Skilled Melbourne Port Services faces competition from at least one other private sector company.

BOX VI.1 PORT TAXES AND CHARGES

Conservancy dues (also known as light dues) are a charge for navigational aids and lights collected by state governments in Queensland and Western Australia, In South Australia, the Ports Corporation collects a Navigation Service charge for similar purposes.

Port authorities levy two types of charges to cover the cost of infrastructure and services they provide to ships:

- wharfage is a cargo-based charge on the quantity of cargo loaded or unloaded by each ship. For container cargo shipped on liner services⁸, wharfage charges are often paid by the shipping line and included in the bill sent to the customer. In other circumstances, however, wharfage bills may be sent direct to the customer (for example, for bulk cargoes, or where cargo is sent by a chartered ship rather than a liner service). Wharfage charges are calculated from container numbers or, for non-containerised cargo, on revenue tonnes (the amount of cargo measured in tonnes, cubic metres, or kilolitres, whichever gives the greatest number).
- tonnage is a charge based on the size of each ship entering the port as measured in registered tons (or length for small boats), and is billed to the ship operator, although the cost would often be passed on to customers via freight rates.

Towage is the charge for tug-boats, a service provided by private sector firms. Pilots are usually responsible for deciding when tugs must be used and the number required, albeit within guidelines specified in regulations published by port authorities or state governments. In some ports, towage charges cover the cost of launches to transfer lines between ship and the shore, and between the ship and its tug boats. In other ports, launch hire is a separate charge to a private sector firm.

Pilotage is the charge for guiding a ship into and out of a port; it covers the cost of hiring a pilot, a launch to take him to the ship, and associated shore-based costs. Pilotage services are increasingly being provided by private companies under arrangements with port authorities. Where a ship's captain has the experience or qualifications required to pilot his own ship into a specific port, the requirement to hire a pilot may be waived by the port, and the ship given an exemption or reduction in pilotage fees.

Source BTCE

⁸ Liner services provide regular sailings based on a published schedule. The term is usually applied to container shipping operations.

Melbourne Port Corporation

The Melbourne Port Corporation was set up on 1 March 1996 and its first annual report will cover the 16 months to 30 June 1997. Charges levied by the MPC include:

Area hire for berths is a cargo-based charge for storing export or import cargoes on berths. The charge is calculated on an hourly basis from the time storage starts until the cargo is removed. For imports, the rate doubles if the area is still being used 72 hours after the ship has completed cargo discharge. Area hire rates range from \$5 per hour (Berth 26 at South Wharf) up to \$71 per hour (Berth 24). The average rate over the sixteen berths available is about \$30 per berth per hour (MPC 1997, p. 1).

Berth hire is a ship based charge calculated on the total time at berth from the first line ashore to last line cast-off (calculated to the nearest 1/10th of an hour, rounded upwards). There are twenty seven berths in the port for which the Port Corporation sets separate berth hire rates ranging from \$42 per hour to \$193 per hour. For all except two berths, the rate is over \$90 per hour, with fourteen of the twenty seven being over \$130 per hour.

At the discretion of the Property Development Manager, any berth may be designated a lay-by berth and hired at a rate of \$42.50 per hour, provided no cargo is being transferred and the operations of the port are not impaired (MPC 1997, p. 2).

Wharfage

Table VI.2 gives a summary of the wharfage charges levied by the Melbourne Port Corporation.

Other charges

The Melbourne Port Corporation also publishes charges for: tanker inspection (\$37.50 per labour hour), equipment hire and usage (for items such as gangways, hoppers, ship safety barriers), and electricity supply (MPC 1997, p. 4).

Private sector

Pilotage and launch hire are provided by a private company, Port Phillip Sea Pilots Pty Ltd (Griffith, C., Port Phillip Sea Pilots Pty Ltd, pers. comm., 10 September 1997).

TABLE VI.2 MELBOURNE PORTS CORPORATION WHARFAGE CHARGES

<i>Type of cargo</i>	<i>Wharfage charge</i>
Containerised cargo	
Full containers	\$34.20 per teu ^a
Empty containers	\$9.98 per teu
Transshipment containers	\$17.15 per teu
Non-containerised general cargo ^b	
Cargo	\$1.18 per tonne or cubic metre
Empty returns	\$0.38 per tonne or cubic metre
Transshipment cargo	\$0.59 per tonne or cubic metre
Bulk cargo (dry and liquid)	
Inwards cargo	\$1.18 per tonne or cubic metre
Outwards cargo; overseas	\$0.84 per tonne or cubic metre
Outwards cargo coastal	\$0.71 per tonne or cubic metre

a Container numbers are measured in 'twenty foot equivalent units' teu. A twenty foot (6.1 metre) container equals one teu and a 40 foot (12.2 metre) container equals 2 teu.

b Non-containerised cargo is often measured in 'cargo tons', taken as the measurement in tonnes weight or cubic metres, whichever is the greater. For liquid cargo, the measure is kilolitres.

Source Melbourne Port Corporation, 1997, p. 3.

Pilotage rates are set by the Marine Board of Victoria in consultation with the Office of the Regulator General (Treasury), and after discussions with shipping interests and the pilotage company. The last rate increase was granted about eight years ago and, since then, Port Phillip Sea Pilots has cut the rate twice. The price charged includes the service of the pilot, launch hire and equipment. The company's licence to provide pilot services expires in about eighteen months.

The arrangement in Melbourne is that the pilot has the authority to decide how many tugs will be used on each job. In other ports, the number of tugs may be specified by regulation.

Pilotage charges in Melbourne may be higher than those in some other Australian ports because of the longer distance between the pilot pick up point and the wharves.

The current rate for piloting a ship from outside the heads to the Port of Melbourne or the Port of Geelong is \$1042 plus:

\$0.0988 per ton for the first 20 000 gross tons, plus

\$0.0320 for each additional ton over 20 000 tons up to 30 000 gross tons, plus

\$0.0198 for each additional ton over 30 000 gross tons (Port Phillip Sea Pilots 1995).

BRISBANE

Ships visiting Brisbane must pay conservancy dues to the State Government via the Queensland Department of Transport, plus wharfage and harbour dues to the Port of Brisbane Corporation.

The State Government also charges for pilotage services into Queensland ports (*Transport Operations (Marine Safety) Regulations 1995* (Qld), pp. 174-175). Ships going into Brisbane pay the Department of Transport for pilotage at the rates shown in table VI.3, but the service is actually provided by a private company, Brisbane Marine Pilots which, in turn, is paid by the Government.

TABLE VI.3 BRISBANE PILOTAGE FEES

<i>Ship size (gross tons)</i>	<i>Pilotage (cents per gross ton)^a</i>
For the first 10 000 gt	18.0
plus, over 10 000 to 20 000 gt	10.6
plus, over 20 000 to 30 000 gt	7.0
plus, over 30 000 gt	1.9

a The minimum charge is \$618.

Source *Transport Operations (Marine Safety) Regulations 1995* (Qld), p.174.

Queensland conservancy fees are:

- for a ship on an interstate voyage:
 - for the first 500 gt: 8.0 cents per gross ton
 - over 500 gt: 13.0 cents per gross ton
- other ships: 13.0 cents per gross ton.

Table VI.4 summarises the wharfage and harbour dues charged on containerised cargo. The same rates per container are charged for all commodities except some grains and fertilisers, which are given discount rates (see the notes to the table).

Wharfage rates for non-containerised cargo are:

- general cargo: \$1.86 per tonne or \$1.67 per cubic metre.
- heavy lift cargo (over 36 tonnes); \$9 per tonne or \$1.67 per cubic metre.
- bulk cargoes: rate per tonne, varying according to commodity, in range \$0.67 to \$1.86 per tonne, with volume discounts allowed for sand going down to 5 cents per tonne.

TABLE VI.4 PORT OF BRISBANE WHARFAGE AND HARBOUR DUES FOR CONTAINERS
(\$ per container)

<i>Container type</i>	<i>Wharfage</i>	<i>Harbour dues^a</i>
Full containers		
6.1 metre (20') half height	13.00	9.90
6.1 metre (20')	26.00	42.00
12.2 metre (40')	52.00	84.00
Refrigerated 6.1 metre (20')	26.00	35.50
Refrigerated 12.2 metre (40')	52.00	71.00
Empty containers		
6.1 metre (20') half height	4.50	2.30
6.1 metre (20')	9.00	5.25
12.2 metre (40')	18.00	9.45

a Harbour dues for grain (SITC 04) are 60 per cent of schedule and for nitrogenous products 20 per cent of the schedule.

Source Port of Brisbane Corporation 1995.

Harbour dues for non-containerised cargo are set on a commodity by commodity basis.

Other services provided to ships at Fisherman Islands by the Port of Brisbane basis include:

- Water; \$1.75 per kilolitre.
- Telephones per connection; \$40 per day.
- Electricity and lighting; As per SEQEB 21 tariff.
- Wharf cleaning; cost plus 15 per cent.
- Water supply, telephones, electricity, ship lighting, and wharf cleaning.

Line handling services are provided by the terminal operators who invoice ships direct (Port of Brisbane Corporation 1995).

SYDNEY PORTS

The charges published by the Sydney Ports Corporation apply to Sydney Harbour and Botany Bay (Sydney Ports Corporation 1997).

Navigation Services Charge

All commercial vessels entering Sydney Harbour or Botany pay a navigation services charge. If they are carrying noxious bulk liquid, gas, or oil cargoes, an additional environmental services charge is levied (Sydney Ports 1996).

- Standard Navigation Services charge; \$0.39 per gross registered ton.
- Environmental services charge; \$0.15 per gross registered ton.

Discounts are allowed for ships making promotional visits (50 per cent reduction), and for ships calling only to bunker (75 per cent reduction), or only

to carry out maintenance or repairs (50 per cent reduction). Ships sailing between Sydney and Botany do not pay an additional charge.

Wharfage and port cargo access charge

Wharfage and the port cargo access charge are payable by the cargo owner via the shipping agent. Containerised cargo pays a rate per twenty foot equivalent unit (teu), and non-containerised cargo a rate per revenue ton (table VI.5). A revenue ton is the measure in cubic metres, tonnes weight, or kilolitres, whichever is the greatest.

The Port Cargo Access Charge is included in the wharfage charges and is collected to recoup the cost of the regulatory framework provided by the NSW Government Office of Marine Administration. The charge is collected by the Sydney Ports Corporation and remitted to the Office of Marine administration.

TABLE VI.5 WHARFAGE AND PORT CARGO ACCESS CHARGE

<i>Cargo</i>	<i>Non-containerised (\$ per revenue tonne)</i>	<i>Containerised (\$ per container)</i>
General cargo, imports	2.00	60.00
General cargo, exports	1.70	45.00
Timber	1.40	ns
Timber products & paper	1.70	ns
Transhipped cargo	2.00	25.00
Bulk liquids	1.55	ns
Empty units	ns	10.00

ns not specified.

Source Sydney Ports Corporation 1997.

Site occupation charges

Site occupation is a time based charge for the use of the Marine Ministerial Holding Corporation's common user berths or for unleased berths. The charges do not apply to berths leased by private operators, who set their own charges. The charges are based on the time a vessel is alongside a berth, or for the time cargo is on a berth (table VI.6). Site occupation charges are payable by the stevedore or occupier of the site for both cargo and passenger ships.

TABLE VI.6 SYDNEY PORTS SITE OCCUPATION RATES

	<i>Standard rate</i>	<i>Lay-up rate^a</i>
Rate per vessel per hour		
No 9 Darling Harbour	100	30
No's 7 & 8 Glebe Island	100	30
No's 1 & 2 White Bay	100	30
Passenger terminal, non-passenger vessels	200	100
Piloted fishing vessels	14	14
Bulk liquids berth	212	62
Passenger vessels, passenger terminal	250	100
Passenger vessels, other berths	200	100
Rate per vessel per day		
Non-piloted fishing vessels	110	ns

a A lay-up rate is provided for vessels undergoing repairs or emergency maintenance, or where some event prevents them from carrying out normal cargo transfer operations. The lay-up rate at the passenger terminal is \$223 per vessel per hour. The lay up rate for passenger ships at other berths is \$500 per vessel per 8 hour period.

Source Sydney Ports 1997.

A lower, lay-up, rate is available for ships undergoing repairs or emergency maintenance, or while events prevent normal cargo transfer operations.

Mooring fees

Mooring fees are time based charges, similar to site occupation fees, but they apply to vessels moored to dolphins or buoys (Sydney Ports Corporation 1996). The rates are:

- Dolphins: \$20 per hour. (A dolphin is a row of piles in the harbour to which a ship can be moored. Some dolphins include a small platform to facilitate loading of ship's stores from service vessels.)
- Buoys: \$7 per hour.

Private sector suppliers

Private sector companies provide the services of pilotage, towage, mooring and unmooring, and stevedoring.

FREMANTLE PORT

Ships sailing into Fremantle pay conservancy dues to the State Government Department of Transport, plus a range of charges to the Fremantle Port Authority.

Conservancy Dues

For vessels over 70 metres in length, conservancy dues for 1996-97 were set at 9.19 cents per gross registered ton, payable on entry into port. No conservancy dues are collected if the vessel has paid them at another port in the state within the preceding two months (Department of Transport (WA) 1996, p. 23).

Pilotage

Pilotage rates for Fremantle are set out in table VI.7.

TABLE VI.7 PILOTAGE AND RELATED CHARGES AT FREMANTLE, JULY 1997

<i>Pilotage service</i>	<i>Charge</i>
Vessels up to 1000 gross tons	
Between Gage Roads and Inner Harbour	522
Vessels over 1000 gross tons	
Sea pilot boarding ground ^a to Gage Roads	1710
Gage Roads to Cockburn Sound	1187
Gage Roads to Inner Harbour	1045
Sea pilot boarding ground to Inner Harbour	2090
Sea pilot boarding ground to Inner Harbour	2280
Removal of a vessel within Cockburn Sound	522
Removal of a vessel within Inner Harbour	237
Surcharge for all anchorages within Cockburn Sound	475
For other pilotage services, rate per hour	142
For arrivals, departures, by ships of which the master holds a Pilotage Exemption Certificate	142

a The area out at sea where pilots transfer between ships and the pilot launch.

Note The charges introduced on 1 July 1995 were reduced by 10 per cent from July 1997. The charges shown here are rounded down to the nearest dollar.

Source Fremantle Port Authority 1995, p. 2.

Other ship-based charges levied by Fremantle include: tonnage, mooring, and berth hire (Fremantle Port Authority 1996, pp. 4-8).

Tonnage rates:

- 14 cents per ton for ships in the Inner Harbour.
- 29 cents per tonne for ships in the Outer Harbour.
- an extra 0.7 cents per ton for ships without an inboard incinerator for both the Inner and outer harbours.
- 4 cents per ton for vessels in port solely for bunkers, or to be refitted or repaired.

Mooring services:

- in the Outer Harbour, \$700 per vessel.
- in the Inner Harbour, \$300 for vessels under 1000 tons and \$550 for all others.

Ship's Berth Hire

A charge of \$100 per hour for berth hire applies to vessels that:

- have not commenced loading/unloading their cargo within two hours of docking; or
- have not vacated their berth within two hours of completing cargo loading/unloading.

The berth hire charge only applies if another vessel wants to use the occupied berth.

Wharfage and Cargo Berth Hire

The cargo based charges at Fremantle comprise a wharfage charge, a cargo berth hire charge (table VI.8), together with a hazardous goods charge and storage charges.

TABLE VI.8 CARGO BASED CHARGES AT FREMANTLE

	<i>Basis of charge</i>	<i>Wharfage (Reg 139) (\$)</i>	<i>Cargo Berth Hire (Reg 139A) (\$)</i>
6.1 metre (20') container, full	each	49.79	14.63
12.2 metre(40') container, full	each	99.58	29.27
6.1 metre (20') container, empty	each	8.10	nil
12.2 metre(40') container, empty	each	16.20	nil
Livestock	per head	0.19	na
Bunkers	per tonne or m ³	2.97	na
Cargoes handled at a heavy duty berth	tonne or m ³	2.97	1.12
All other cargo	tonne or m ³	2.97	na

Source Fremantle Port Authority 1995, p. 12.

Hazardous cargo charge

A charge of 4.97 cents per cargo tonne⁹ is levied on bulk hazardous cargo¹⁰ moving through the Port of Fremantle (Fremantle Port Authority 1996, 13). The charge has to be paid for hazardous cargo loaded or discharged at the port, and by ships calling at the port with such cargo on board, even if it is not unloaded at Fremantle.

Storage charges

Goods landed in Fremantle and stored on port premises should be removed within four days, after which they are liable for storage charges at the rate of \$1.28 per tonne per day, or \$13 per day for motor vehicles (Fremantle Port Authority 1995, p. 14).

⁹ The hazardous cargo levy is calculated as a rate per tonne, per cubic metre, or per kilolitre, as appropriate.

¹⁰ Bulk hazardous cargo comprises goods covered by classes 1 to 9 of the International Maritime Dangerous Goods Code that are not in a container or otherwise packaged.

APPENDIX VII FUEL TAXES

Until August 1997, both the Commonwealth and state governments levied taxes on the fuel used by transport. The Commonwealth tax took the form of traditional excise duties levied on the production of the various types of fuel used by all modes of transport, while the states and territories charged franchise fees giving retailers the right to sell petrol and also distillate (diesel fuel) for road transport purposes only.

On 5 August 1997, the High Court delivered a decision¹¹ that franchise fees levied by the states and territories were duties of excise for the purposes of s. 90 of the constitution. The franchise fees were therefore declared invalid because s. 90 limits the power to levy excise duties to the Commonwealth Government (Australian Government Solicitor 1997).

In response to the High Court decision, the Commonwealth Government increased its rates of excise duties on petrol and distillate on 7 August 1997. The extra revenue collected by the Commonwealth will be paid to the states and territories to replace the lost franchise fees.

The administrative arrangements for the 'safety net' arrangements were announced by Mr Costello, the Treasurer (Treasurer, 1997).

The states and territories have indicated that out of the Commonwealth payments under the safety net they will retain in their budgets an amount equal to forecast business franchise collections under the current applicable fees. The balance - or excess revenues - will be refunded to manufacturers or wholesalers in order to avoid as far as possible price increases for consumers and petroleum users. The states and territories are putting in place arrangements to ensure that this happens.

The states and territories have indicated that they will give priority to ensuring that petroleum users are not disadvantaged as a result of implementing the safety net. This will include off-road users who have previously qualified for rebates or exemptions under the business franchise fees schemes.

FUEL EXCISE

Table VII.1 shows the rates of Commonwealth excise levied on fuel sold for use in Australia. There have been three increases during 1997: all fuel excise rates increased in February 1997, there was a slight reduction in avgas excise in

¹¹ The High Court decision was delivered in the cases of *Ha and Lim v New South Wales* and *Walter Hammond & Associates Pty Ltd v New South Wales*.

July, and the rates for petrol and diesel were increased by 8.1 cents per litre to fund the 'safety net' arrangements to replace state franchise fees.

Although all excise income goes to the consolidated revenue account, there is 'soft hypothecation' for some of the excise payments, that is, some Commonwealth Government bodies regards them as cost recovery payments.

- the excises on aviation turbine fuel and aviation petrol are regarded as industry payments for ASA and CASA. (see appendix IV)
- 18 cents per litre of the diesel excise paid by heavy trucks is counted by the NRTC as a partial cost recovery payment for the damage they cause to roads (see appendix II).

From 7 August 1997, some of the excise revenue from petrol and diesel sales will also be paid to the states and territories.

In a normal year, CPI adjustments to excise rates may be made twice a year by Customs in August and February. The indexation adjustments to excise are based on an adjustment factor, calculated as the most recently released CPI figure divided by the highest CPI figure for a preceding June or December quarter (Sub-section 6A(5) of the *Excise Tariff Act 1921*). Where the change in the CPI adjustment factor is less than one (1.0), Customs does not increase the excise rate (Sub-section 6B(5) of the *Excise Tariff Act 1921*) (Australian Customs Service, pers. comm., 23 July 1997.)

TABLE VII.1 COMMONWEALTH FUEL EXCISE RATES
(cents per litre)

<i>Fuel</i>	<i>Excise 3 July 1997</i>	<i>Excise 7 August 1997</i>
Leaded petrol	36.872	44.972 ^a
Unleaded petrol	34.697	42.797 ^a
Diesel	34.697	42.797 ^a
Avgas	17.403	17.403
Avtur	1.785	1.785
Fuel oil	7.200	7.200
Heating oil	7.200	7.200
Kerosene	7.200	7.200

a The revenue from the excise increase will be paid to the states and territories to replace their lost franchise fees.

Source Department of Primary Industries and Energy, pers. comm., 7 August 1997.

TABLE VII.2 EXCISE RATES ON AVIATION FUELS FOR CASA AND ASA, 1997.
(cents per litre)

<i>Fuel type</i>	<i>CASA</i>	<i>ASA</i>	<i>Total</i>
Avgas	1.711	15.692	17.403
Avtur	1.785	0	1.785

Source Department of Primary Industry and Energy, pers. comm., 7 August 1997 and Wade, R., Aviation Policy Division, pers. comm., 7 August 1997.

COASTAL SHIPPING

Australian flag ships dedicated to the coastal trade pay fuel excise at the rate of 42.797 cents per litre for diesel and 7.200 cents per litre for fuel oil. As a generalisation fuel oil is for the main engines and diesel powers the smaller, auxiliary, engines that generate electricity. The tonnage of fuel oil used by shipping would greatly exceed its consumption of diesel.

No rebates are paid on excise paid on fuel oil consumed on coastal shipping operations but some rebates are available on diesel.

- **Diesel Use Rebate (Domestic use).** For diesel used on ships to generate electricity for domestic purposes, ship operators can claim a refund of about 26 cents per litre under section 78A (b) of the *Customs Act 1901*. This section allows rebates on diesel fuel purchased for use at residential premises for cooking, heating, lighting, and similar domestic purposes. The amount of this rebate is recalculated regularly by the Australian Customs Service (Wensor, B., Australian Customs Service, pers. comm., 23 September 1997 and Weeks, M., BHP, pers. comm., 22 September 1997).
- **Road user charge rebate.** For diesel used for non-domestic purposes, ship operators can claim a refund of 5.31 cents per litre under sections 52E (1) and (2) of the *Excise Regulations* in force under the *Excise Act 1901*. This section allows rebates in respect of marine diesel fuel for ships that are 60 metres or more in length and of a kind defined as a 'trading ship' in the *Ships (Capital Grants) Act 1987*. The regulations note that 5.31 cents per litre is the charge rate determined under section 10 of the Australian Land Transport Development Act 1988 for the purposes of that Act in determining a road user charge. (Boyle, P., Australian Customs Service, pers. comm., 23 September 1997 and Weeks, M., BHP, pers. comm., 22 September 1997).

The proportion of diesel attributed to domestic use varies with the type and size of ship. For a cape size vessel of the type used by BHP, Customs pays the 26 cents per litre domestic rebate on approximately 25 per cent of diesel consumption, and the 5.31 cents per litre rebate on the remaining 75 per cent.

The price of diesel sold in Australian ports includes an excise component of only 34.697 cents per litre. The fuel suppliers actually pay the higher rate of 42.797 cents per litre but do not pass on the recent increase of 8.1 cents because they expect to be reimbursed by state governments. (The extra 8.1 cents per litre excise replaces state fuel franchise fees which applied only to diesel sold for road use. For legal reasons, however, fuel suppliers pay the full 42.797 cents per litre excise to the Commonwealth, the Commonwealth pays the 8.1 cents per litre to the states, and the states reimburse suppliers for sales to exempt, off-road, users, such as ship operators.)

Ships in international trade that carry domestic cargo around the Australian coast also pay fuel excise, provided the domestic cargo accounts for 10 per cent or more of their cargo capacity. The 10 per cent rule applies to all vessels in international trade, including both Australian flag ships and foreign registered vessels carrying coastal trade under a single voyage permit (Price, P., M-Pol, pers. comm., 13 May 1997). For example;

- some Australian ships carry coal from eastern Australia to Japan, then sail to Western Australia where they load iron-ore for a coastal voyage to Newcastle or Port Kembla.
- foreign ships in the European and Asian trades sometimes carry cargo between Melbourne and Fremantle when sailing past these ports as part of a longer international voyage.

International trading ships carrying domestic cargo on the coast have to pay fuel excise even if they are burning fuel purchased overseas. Customs measures their fuel tanks at their first and last ports of call in Australia, then bills them for excise on fuel used on the coast (provided they reach the ten per cent threshold).

Because payment is made direct to Customs, the rate of excise paid by international ships for diesel purchased overseas is the full 42.797 cents per litre, that is, it includes the extra 8.1 cents per litre. International trading ships can apply to Customs for the domestic use rebate and the road use charge rebates but, at the time of writing, no administrative procedures exist to refund the 8.1 cents component. The Commonwealth pays the 8.1 cents to the states and the states, as yet, have no arrangements for making refunds (Weeks, M., BHP, pers. comm., 22 September 1997).

The Department of Transport and Regional Development estimates that maritime fuel excise generated revenue totalling about \$28 million in 1994-95, \$24 million from Australian flag ships and the rest from foreign registered vessels (Price, P., M Pol, pers. comm., 13 May 1997).

The Department also estimated that fuel excise was paid by only about 25 per cent of ships sailing under SVPs, and that these vessels were mainly tankers and bulk carriers. The remaining 75 per cent comprised mainly ships carrying general cargo which did not pay excise because their coastal trade was less than 10 per cent of capacity.

The Shipping Reform Group (SRG) has recommended changing the 10 per cent exemption arrangement, first, because it is inequitable to Australian flag ships and, second, because it is a disincentive to foreign ships to act in a commercial way. The SRG recommended the introduction of a graduated scale, with foreign ships paying excise on only a percentage of their fuel usage around the coast, the actual percentage increasing with the share of their hold capacity taken up by domestic freight. (SRG 1997, p. 5 and p. 34).

MINING AND PRIMARY INDUSTRY

Sections 164 (1a and 1aa) of the *Customs Act 1901* also allow rebates of diesel excise in respect of mining operations or primary industry (otherwise than for the purpose of propelling a road vehicle on a public road¹²) (Ling, C., Australian Customs Service, pers. comm., 7 October).

¹² From 1 August 1997, mining operations will be eligible for diesel rebates otherwise than for the purpose of propelling *any* vehicle on a public road, that is, machinery such as graders and excavators will be excluded. For primary producers, the legislation was not changed;

In respect of mining operations, Section 164 allows rebates for diesel used in transporting minerals or ores from a mine to another place for beneficiation. If no beneficiation is involved, no rebate is not payable. Trains carrying iron ore from mines to ports do not qualify for an excise rebate if their cargoes are loaded directly into ships. However, if the ore is beneficiated¹³ before export, a rebate is paid. The rebate paid to miners is 2.388 cents per litre less than the rebate paid to primary producers.

The rebates available to mining under Section 164 (1a) are not mode specific but can be paid to rail or sea¹⁴ or road transport (but only on private roads; road transport on public roads does not qualify for the rebate). The Act precludes multiple rebates on any diesel purchase and hence it seems unlikely that shipping operators would claim the rebate available to the mining industry because they benefit from the higher domestic use and road user charge rebates described above.

Excise rebates must be paid to the firm which purchased the fuel, which is usually the transport operator rather than the mining company that consigned the cargo. The BTCE understands from Customs that Section 164 rebates for mining operations are paid to road transport operators and rail operators in most states. Private sector rail services can claim the rebate as well as government owned railways.

For primary industry, excise refunds are available for fuel used in on-farm operations, in the gathering in of primary produce, and the movement of livestock for agistment. Road transport is eligible for the rebate to primary producers but only for movements on private roads. Any component of a transport movement on public roads does not qualify for the rebate. For these operations, the refund is 100 per cent of the excise paid. Refunds or rebates are not available on fuel used for subsequent movements of primary products, for example, between silos or from silos to export ports.

PETROLEUM LICENCE FEE

The now defunct business franchise fees were imposed by all states and territories on the sale of tobacco and liquor. With the exception of Queensland, all states and territories also imposed a petroleum franchise licence fee on sales of petrol and distillate (diesel fuel). The fee for distillate applied only to

they can not claim rebate for driving road vehicles on public roads, but machinery qualifies for a rebate.

¹³ Beneficiation involves upgrading the concentration of ores or the removal of impurities, but not the final smelting or processing. Transforming bauxite into alumina qualifies as beneficiation, but the final production of aluminium does not.

¹⁴ Under recent changes to the legislation, sea transport will cease to qualify for the rebate available to mining after 1 August 1997.

sales for road purposes; it did not apply on distillate sold for shipping, rail, or maritime operations, or for other off road uses.

The petroleum franchise licence fee was calculated as an ad valorem rate plus, in some jurisdictions, a small fixed fee. In most states and territories, the fee was about \$100 per annum per annum or less, although for unlicensed suppliers in WA it was \$600 per annum. The ad valorem charge was calculated:

- as a percentage of the declared dollar value of sales in New South Wales, Victoria, South Australia, and Tasmania. Under this method, each of the jurisdictions declared the value of a litre of fuel for the purposes of the fee. For distillate, declared values in 1996 ranged from 25.50 cents per litre in NSW to 73.49 cents per litre in Victoria. For petrol, declared values ranged from 42.0 cents per litre in NSW to 76.71 cents per litre in Victoria. (The same values applied to both super and unleaded petrol.)
- on a cents per litre basis in Western Australia, Northern Territory, and the ACT.

In the Northern Territory, the licence fee was based on the monthly purchases by wholesalers in the period two months prior to the licence month. In all other jurisdictions, the fee was based on their monthly sales in the period two months prior to the licence month.

South Australia defined a number of zones within the state, with the level of the franchise fee varying between zones. Higher rates applied in the urban area.

Table VII.3 shows the petroleum franchise licence fees in 1996. For those states and territories which calculated the fee by the declared value method, the table shows the equivalent amount in cents per litre.

TABLE VII.3 PETROLEUM FRANCHISE LICENCE FEES FOR DISTILLATE, 1996

<i>Jurisdiction</i>	<i>Annual fee^a</i> <i>(\$)</i>	<i>Ad valorem rate</i>		
		<i>Super petrol</i>	<i>Unleaded petrol</i>	<i>Distillate^b</i>
		<i>(cents per litre)</i>		
New South Wales	10	7.88	7.88	7.93
Victoria	50	9.28	9.28	11.39
Queensland	nil	nil	nil	nil
Western Australia	nil	9.67	9.67	7.45
South Australia ^c	131	9.93 to 4.89	9.77 to 4.73	11.14 to 6.11
Tasmania	50	6.15	6.15	6.11
Northern Territory	120	7.00	7.00	7.00
Australian Capital Territory	50	7.88	7.88	7.93

a Annual fixed fees shown are for licensed sources. In some jurisdictions, different fees are charged for unlicensed sources.

b For distillate, the fee is charged only on sales for road purposes.

c The South Australian rate varies within the state; higher rates being charged in the urban zone.

APPENDIX VIII OTHER TAXES AND CHARGES ON TRANSPORT

Unlike the taxes discussed in preceding appendixes, payroll tax, sales tax, and import duty are not specific to the transport industry but also apply to other sectors of the economy. The effect of the three taxes may vary, however, within the transport industry. The rates of sales tax and import duty vary among the transport modes, and rebates on payroll tax are allowed to small companies.

PAYROLL TAX

All States and Territories impose a payroll tax. Rates of tax range between 5 per cent and 7 per cent (Table VIII.1). All states and territories also provide an exemption to small payrolls as a way of assisting small business. For example, the NSW payroll tax is 6.85 per cent, but with the first \$600 000 of wage payments tax exempt.

TABLE VIII.1 PAYROLL TAX RATES, 1 JANUARY 1997

<i>State/Territory</i>	<i>Tax rate (per cent)</i>	<i>Small business exemption (\$000)</i>
New South Wales ^a	6.85	600
Victoria	7.00	515
Queensland ^b	5.00	800
Western Australia ^c	6.00	625
South Australia ^a	6.00	456
Tasmania ^d	7.00	565
Northern territory ^e	7.00	520
ACT ^a	6.85	700

a Tax base includes employer superannuation payments

b Qld small business exemption reduces to nil between \$800 000 and \$3.0 million

c WA small business exemption reduces to nil between \$625 000 and \$5.2 million

d Tasmanian small business exemption reduces to nil between \$565 000 and \$1.412 million

e NT small business exemption reduces to nil between \$520 000 and \$1.3 million

Source New South Wales Treasury 1996, p. 9.

In four jurisdictions, the exemption progressively falls to zero as the size of the payroll increases. For example, Queensland levies a payroll tax of 7 per cent,

with a small business exemption of \$750 000. As payroll size increases above \$750 000, however, the amount of the exemption is progressively reduced until, at \$3.2 million and above, employers pay the full tax on all of their payroll. In three jurisdictions (NSW, SA, and the ACT) the employer's contributions to superannuation are counted in the tax base for payroll tax.

IMPORT DUTY

Table VIII.2 summarises the rates of import duty payable on transport equipment. As a generalisation, no duty is payable on ships or planes, while a rate of 5 per cent is payable on rail rolling stock (passenger and freight) and trucks (although trucks from Canada are duty free because of a trade agreement). The rate of duty on component parts is generally the same as for fully assembled items of transport equipment, except for passenger vehicle replacement parts for which duty is 15 per cent, compared to 22.5 per cent for assembled vehicles.

TABLE VIII.2 IMPORT DUTY ON TRANSPORT EQUIPMENT
(per cent)

<i>Description of goods</i>	<i>Tariff rate</i>
Rail locomotives, wagons, and other rolling stock ^a	5
Containers designed for carriage by one or more modes ^b	Free
Rigid trucks, prime movers, trailers and buses from Canada ^c	Free
Rigid trucks, prime movers, trailers, and buses from other countries ^c	5
Aircraft and aircraft parts ^d	Free
Ships over 150 Gross Construction Tons ^e	Free
Buses with capacity of 10 or more persons (including driver) ^f	5
Passenger motor vehicles ^g	22.5%
Utilities ^h	5
Diesel off-road vehicles ⁱ	5

a Rail: tariff headings 8601 to 8607.

b Container: tariff heading 8609.

c Tariff headings: 8704 (trucks), 8701.20 (prime movers), 8716 (trailers), and buses (8702 and 8703).

d Aircraft: tariff heading 8802.

e Ships: tariff heading 8901.

f Buses: tariff heading 8702.

g Passenger cars: tariff heading 8703. Tariff for Canada: 15 %. Tariff rates will fall to 15 per cent on 1 January 2000.

h Utilities: tariff heading 8704. Tariff for Canada: free.

i Diesel off road vehicles: tariff heading 8703.31.20. Tariff for Canada: free.

Source Australian Customs Service 1996.

SALES TAX

Sales tax is very complicated. Liability to pay sales tax depends on the goods, or the purpose for which they will be used, or the nature of the organisation or person buying the goods. Exemptions are given in Schedule I of the *Sales Tax (Exemptions and Classifications) Act 1992*.

As a generalisation, ships, planes, and trains are exempt from sales tax when purchased for hire and reward transport operations but trucks are not. The only exemption given to road transport equipment per se is for buses, with seating for twelve or more adults, used in hire and reward public transport.

BOX VIII.1 TRANSPORT EQUIPMENT EXEMPT FROM SALES TAX

The items of transport equipment exempt from sales tax are listed in Schedule I of the *Sales Tax (Exemptions and Classifications) Act 1992*. They include:

Ships (Item 59), used mainly for purposes other than pleasure, sport, recreation, private transport, or accommodation. Ships are also exempt if they are used for public commuter transport or for regular and scheduled sight seeing tours for the public in the course of a business.

Machinery and apparatus normally used as part of the equipment of a ship is also exempt except for: equipment used in connection with the preparation or consumption of food; goods used for the entertainment, comfort, or recreation of crew or passengers, and; goods of a kind normally used for domestic purposes.

Aircraft (Item 61), plus machinery and equipment used mainly in aircraft.

Public railways (Item 62), including goods used exclusively, or in connection with, the establishment, operations, or maintenance of a public railway for transporting passengers or freight.

Passenger buses ((Item 63) used mainly for transporting passengers for reward and which provide seating for twelve or more adults. Chassis used in constructing such buses are also exempt.

Public transport authorities (Item 64), including goods used by a public transport authority exclusively for or in connection with the establishment, conduct or maintenance of transport services. This item does not cover goods for use by the authority as part of a car remuneration package.

Source *Sales Tax (Exemptions and Classifications) Act 1992*.

Trucks may, however, sometimes qualify for sales tax exemption where they are used as inputs for primary production or manufacturing (but only where they are used exclusively in the premises where the business is conducted), or where they are purchased for use by an organisation exempt from sales tax, such as government authorities or hospitals. Heavy motor vehicles used for transporting livestock in remote areas are exempt from sales tax (remote areas being the zones described in section 79A of the *Tax Assessment Act 1936*). Except in these specific cases, rigid trucks and semi-trailers used by hire and reward operators are liable to full sales tax rate of 22 per cent. For imported transport equipment, sales tax is calculated on the taxable value (value for customs purposes plus any import duties uplifted by 20 per cent).

Passenger motor vehicles with a taxable value less than \$36 995 are subject to sales tax at the rate of 22 per cent on the taxable value (wholesale value). Motor vehicles with a taxable value above \$36 995 are subject to sales tax at the rate of 45 per cent on the portion of the taxable value of the vehicle exceeding \$36 995 (Australian Taxation Office 1997). The indexed motor vehicle cost price limit for motor vehicle depreciation in 1997-98 is \$55 134. The sales tax exemptions given to air and sea seem to cover only planes and ships plus their normal on-board equipment. For rail, however, the exemption is wider, covering goods used in connection with the operation of public railways carrying passengers or freight. A similar broad exemption is given to operators of public transport systems. (Details of the items on which Queensland Rail pays sales tax are shown in table III.4 in appendix III.)

The costs faced by transport operators may also be affected by sales tax exemptions given in other areas. Total exemptions are given to petroleum products (Item 55, Schedule I of the *Sales Tax (Exemptions and Classifications) Act 1992*) and on earth moving machinery used in carrying out contracts for bodies whose own use of machinery would be covered by an exemption, namely, states, territories, or public transport authorities (Item 37). In practice, this means that the machinery purchased by contractors for road construction for government is exempt from sales tax.

ABBREVIATIONS

AATA	Australian Air Transport Association
ABS	Australian Bureau of Statistics
ACS	Australian Customs Service
AME	Aircraft maintenance engineer
AMSA	Australian Maritime Safety Authority
AN	The Australian National Railways Commission, trading as Australian National
ANAO	Australian National Audit Office
ANL	Assessed noise level
APS	Australian Protective Service
AQIS	Australian Quarantine Inspection Service
ASA	Airservices Australia
Aviation Policy	Aviation Policy Division of the Commonwealth Department of Transport and Regional Development
avgas	Aviation gasoline
avtur	Aviation turbine fuel
BTCE	Bureau of Transport and Communications Economics
CAA	Civil Aviation Authority
CASA	Civil Aviation Safety Authority
CPI	Consumer price index
CSO	Community service obligation
CVP	Continuing voyage permit
D	Great circle distance
DIMA	Department of Immigration and Multicultural Affairs
DTA	Double taxation agreement
ERC	En route charges
ESA	Equivalent standard axle
FAC	Federal Airports Corporation
FIR	Flight information region
GAIT	General aviation infrastructure charge
GBE	Government business enterprise
GTK	Gross tonne kilometre
GVM	Gross vehicle mass
IAC	Industries Assistance Commission
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFR	Instrument flying rules
IPART	Independent Pricing and Regulatory Tribunal (NSW)

L-Pol	Land Transport Policy Division, of the Commonwealth Department of Transport and Regional Development.
MPC	Melbourne Port Corporation
M-Pol	Maritime Policy Division, of the Commonwealth Department of Transport and Regional Development
MPS	Melbourne Port Services
MRC	Mass rating for charging
MSC	Meteorological service charges
MTOW	Maximum take-off weight
NRC	National Rail Corporation
NRT	Net registered tonnage
NRTC	National Road Transport Commission
NMVOG	Non-methane volatile organic compound
PAYGO	Pay as you go
pers. comm	personal communication
PCU	Passenger car units
PMC	Passenger movement charge
PTC	Public Transport Corporation (Victoria)
QCA	Queensland Competition Authority
RAC	Rail Access Corporation (NSW)
RFC	Rescue and firefighting charge
RFFS	Rescue and fire fighting service
RONI	Roads of national importance
RPT	Regular public transport (air services)
RTA	Roads and Traffic Authority (NSW)
SCT	Specialised Container Transport
SOLAS	Safety of Life at Sea (International convention on)
SITC	Standard International Trade Classification
SRG	Shipping Reform Group
SVP	Single voyage permit.
TER	Tax equivalent regime
Teu	Twenty foot equivalent unit
TFES	Tasmanian Freight Equalisation Scheme
TNC	Terminal navigation charge
TNT	TNT Australia Pty Ltd
VFR	Visual flying rules

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