

Road Transport Reforms: Implications for Rural and Remote Areas

John Asman

Project Leader

*Bureau of Transport and
Communications Economics*

Greg Murtough

Principal Research Officer

*Bureau of Transport and
Communications Economics*

Adrian Chippindale

Senior Research Officer

*Bureau of Transport and
Communications Economics*

Abstract:

Concerns have been expressed that the introduction of a national system of road user charging for heavy vehicles could adversely affect transport operators, people and industries in rural and remote areas of Australia. Part of a broader study, the paper describes the impacts that changes to road user charges would have on vehicle operating costs in rural and remote Australia and on the operation of heavy vehicles by Queensland farmers. The analysis indicates a diversity of impacts to be expected from any given change to current road user charges.

The views expressed in this paper are those of the authors, and do not necessarily represent those of the Bureau of Transport and Communications Economics.

Contact Author:

John Asman

Bureau of Transport and Communications Economics

GPO Box 501

CANBERRA ACT 2601

Telephone: (06) 274 6877 Fax: (06) 274 6816

Special Note

This study was undertaken prior to the release of the National Road Transport Commission (NRTC) *Heavy Vehicle Charges Determination* on 22 June 1992. The paper has been updated to include the results of the application of the study methodology to the charges recommended by the NRTC. Those results are appended, in brief, to the two Concluding comments sections in the paper under the sub heading NRTC charges.

Introduction

Under the current system of road user charges in Australia, each State and Territory independently sets charges for vehicles. These charges generally consist of a registration fee plus various fuel taxes. In addition, the Commonwealth Government imposes fuel taxes part of which can be viewed as a type of road user charge. This system introduces distortions into the economy because charges are not necessarily related to the extent of road use and because there is incentive to base operations in those States or Territories with lower registration costs.

In May 1990 the Commonwealth Government released the report of the Inter-State Commission (ISC) entitled "Road User Charges and Vehicle Registration: A National Scheme". The report recommended that there should be a single national scheme of vehicle registration and road user charges in Australia to replace the current nine schemes.

The recommendations and work of the ISC were examined by a number of specialised committees of Commonwealth, State and Territory officials, all reporting to a single Overarching Group Committee (OAG). The recommendations of the OAG were subsequently put to a Special Premiers' Conference (SPC) at the end of July 1991.

At the SPC in July 1991, heads of government agreed to a wide ranging program of reforms across the economy including specific road provision, charging and regulation reforms. It was also agreed to establish a National Road Transport Commission (NRTC) to develop and implement national arrangements for registration, regulation and charging of vehicles over 4.5 tonnes.

The government directed the BTCE, together with the Australian Bureau of Agricultural and Resource Economics (ABARE), to analyse the impact of any new charges on the cost of transport in rural and remote Australia, and the resultant impact on the consumers and producers in these areas. Work on this study began around August 1991.

The principal object of the study was to address the impact of a range of hypothetical charging options in such a way as to assist the processes of determining appropriate reforms to road user charges. With the establishment of the NRTC, an additional focus was added to the BTCE's work and efforts were made to relate the study to the NRTC's broader objectives and time frame.

The study concentrated on the impact of altered road user charges on the cost of transport and on some industries in rural and remote Australia. The study methodology was influenced by limits on the availability of relevant data and the relatively short time frame available in which to conceive and undertake the study and to publish the results. The overriding goal of the project was to contribute to the process of developing an improved system of national road user charges.

In consideration of these factors, the BTCE work focussed primarily on identifying the impact of changes in road user charges on vehicle operating costs in representative rural and remote areas. In addition, the existence of data on the specific vehicle operations of Queensland broadacre farmers enabled the BTCE analysis to go further and examine the impact on this particular industry of the likely first round effects of altered charges on farm cash income.

ABARE produced estimates of the impacts of altered charges on two important and contrasting industries: beef cattle in the Northern Territory and grain in eastern Australia. This paper only outlines the work done by the BTCE, and does not cover the ABARE contribution to the joint study.

Effects on Vehicle Operating Costs

This section addresses the effects that changes to road user charges might be expected to have on representative full time commercial vehicle operators across rural and remote Australia. It describes the methodology employed and provides a broad overview of the principal outcomes of the study.

Methodology

Although consideration was given to the use of nationally available statistics such as regional freight flow data, vehicle registration records and the information contained in the Survey of Motor Vehicle Usage (SMVU), it was concluded that these sources could not provide the required detail to enable impacts to be investigated at a localised level.

In consequence it was judged necessary to employ a case study approach. Although it was obviously impractical to cover the operation of every vehicle configuration in every rural and remote area across Australia, an attempt was made to select cases that were as representative as practical of the diverse range of vehicle operations in rural and remote areas. In addition a particular effort was made to include those aspects of rural and remote area vehicle operation that might be regarded as being potentially adversely affected by the types of revised charges under consideration.

To give a focus to this work, the study sought to identify specific routes across rural and remote Australia along which key categories of road transport were undertaken. The routes selected for the study are illustrated in the map shown in figure 1.

These routes were selected so as to reflect the diversity of circumstances across rural and remote Australia. The criteria used to select the routes included the nature and the volume of economic activity in the centres and regions along the route, the population of centres and regions along the route, the climate and topography of the regions, the length and surfaces of the route, and the State or Territory through which the route passed.

The process of route selection was undertaken by the BTCE in consultation with officers from each of the various State and Territory Departments of Transport. Several road transport industry associations were also advised early in the life of the project of the routes proposed.

Ten routes were finally selected, with at least one route being selected for each State and Territory, except Victoria and the Australian Capital Territory.

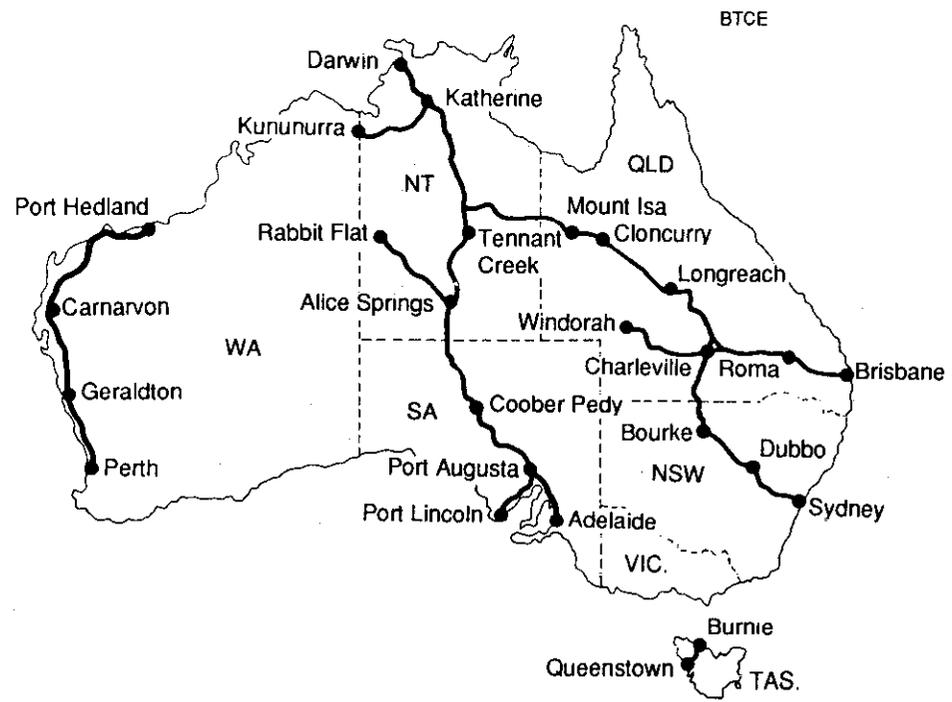


Figure 1 Routes examined in the Remote Area Study

Once the routes were selected, a list of operators using the selected routes was assembled. State and Territory Departments responsible for the portfolios of transport and roads were contacted and provided significant assistance. Most major road transport industry associations were also contacted in an endeavour to obtain the names of members willing to participate in the survey. In some cases, telephone directories were used to supplement the first two sources to ensure the list of operators identified against each route was sufficiently comprehensive.

The operators identified by these methods were then surveyed by telephone, enabling ready clarification of both questions and answers. About 60 operators were contacted and asked to participate in the survey. Only one operator declined. The survey questions were designed with the requirements of the Austway Road Transport Costing System in mind. Austway is a commercially available truck costing model designed to estimate the costs of particular road transport operations. The use of this model ensures that the study is based on independent estimates of vehicle costs obtained from a system that has withstood the scrutiny of the market over several years.

Particular attention was paid to the formulation of survey questions to ensure that the information sought was sufficient to meet the data needs, that the questions were not unduly obtrusive and could be answered with only minimal reference to accounting records. The questions primarily sought information on the physical characteristics of the task performed (for example: vehicle type and age, driving details, kilometres travelled) rather than accounting details.

Two specific checks were made to ensure that the vehicle operations covered were sufficiently representative. Firstly, a check was made on whether or not the transportation of the known principal goods along the route had been accounted for (e.g. grain on the Eyre Peninsula). Secondly, a comparison was made of the range of vehicle types addressed in the survey with the range of vehicle types that were known to use the route in question. This information was available from Culway and AADT data supplied by the relevant State and Territory departments, or from survey data supplied by the same departments.

An important input to the Austway model was data on road and terrain conditions on each route. This was based on information from a variety of sources, including BTCE data holdings, State and Territory departments responsible for roads, and the operators themselves.

In the course of the survey it was noted that many operators did not travel from origin to destination solely over the selected route. Many operators start their journey from a point not on the chosen route, and similarly finish their journey at a point off the route. These operators are included in the survey results because they make use of the route in the course of the journey and because such operators are often representative of operations on the route.

As a general observation it should be noted that the purpose of preparing estimates based on these routes was not to simulate the costs of individual operators undertaking specifically selected operations. Rather the objective was to focus the study on a relevant cross section of important rural and remote operations and to produce indicative estimates of the costs of representative vehicle operations actually undertaken in those areas. Such activities could range from, for example, the transport of live feral goats across Queensland, to the transport of mining products in Western Tasmania.

The resulting operational data was fed into the Austway model to generate indicative operating cost estimates for each identified category of vehicle operation over a range of annual distances travelled. Using least squares regression techniques, a linear equation for the annual operating cost of each class of vehicle operation, as a function of annual distance travelled, was then generated.

A large spreadsheet was used to calculate the annual operating cost for each operator over a relevant range of annual distances travelled and under a range of hypothetical road user charges. On advice from the NRTC seven possible road user charges were analysed. These were:

- OAG Phase One recommendations, on a flat rate basis;
- OAG Phase One recommendations on a distance travelled basis;
- OAG Phase Two recommendations (essentially distance based);
- weighted average of existing State charges on a flat rate basis;
- weighted average of existing State charges on a distance travelled basis;
- New South Wales charges on a flat rate basis; and
- New South Wales charges on a distance travelled basis

Changes to Commonwealth or State fuel taxes were not investigated.

Charges levied on a "flat rate" basis are similar in effect to current registration charges. They apply equally to all road users irrespective of how far, or how little, they travel. Charges levied on a "distance travelled" basis vary directly with distance. In essence, road users travelling twice as far as others would pay twice as much. Distance based charges are notional to the extent that it would be impractical at present to levy such charges strictly in accordance with annual distance travelled. The distance based variants of the OAG, weighted State average and New South Wales charges were calculated so as to raise the same total revenue per vehicle class as the flat rate charges. Flat and distance based fees have different advantages and disadvantages not addressed in this paper. What has been addressed is the differing impacts that such fee structures have.

Essentially the seven options above were regarded as providing upper bound (OAG), lower bound (weighted average) and intermediate (New South Wales) estimates of the level of revised charges that might ultimately be recommended in the interests of road transport reform.

The spreadsheet provides not only details of the effects of the charging options under various examples of distance travelled but also, for the many vehicles specified, provides the potential to calculate quickly the impact of any alternative hypothetical charge that might be considered. For example, following the completion of the study, the effects of the NRTC June 1992 recommended charges were estimated. The results have been appended, in brief, to the Concluding comments sections in this paper.

Diversity of Effects

The effect on any given heavy vehicle operator of a change in road user charges depends on:

- the current applicable charges
- the level of future charges
- the charging principles applied (fixed or distance related charges, the availability of rebates against flat fees etc)
- the nature of vehicle operations (distance travelled, operating costs)
- competitive circumstances (existence of a rail alternative, nature of the market, overall level of economic activity etc)

Given the diversity of factors determining specific vehicle operating costs and the diversity of factors that influence changes upon those costs, it is not surprising that altered

charges are likely to impact upon different vehicle operators in different ways. The discussion presented seeks to provide a general understanding of such impacts by presenting illustrative examples.

Variation in Current State and Territory Charges

Current registration charges can vary by up to several hundred percent between the States and Territories. As an illustration, figure 2 shows the January 1991 registration charges applicable to a typical 6-axle semitrailer. Note that because the States and Territories adopt different charging bases (eg gross mass, tare mass, engine size, number of axles etc) the charges shown in this comparison are indicative rather than absolute.

Hypothetical Future Charges

The debate to date on possible future road user charges has canvassed charging options that also vary substantially. For the purposes of this study that range was reduced somewhat by the selection of the chosen hypothetical charging scenarios. A limited illustration of the range of possible future charges considered is provided by figure 3. These charges would apply to a typical 6-axle semitrailer travelling average annual distances under both flat fee and distance based schemes.

An Example of Changes in Operating Costs

Table 1 sets out the changes in operating costs for a 6-axle semitrailer that would result from two flat charge options and two distance based charging options. The distances used were the averages of those reported by the operators in each State.

The table depicts the results in both absolute terms (the dollar increase in annual charges payable) and in relative terms (the percentage increase in annual operating costs). The latter figure helps place increased charges in perspective and provides some indication of the potential for consequential increases in freight charges. The table provides examples of many of the generalisations to emerge from the study but it is important to note that these generalisations do not hold for all vehicles or for all circumstances of use. The figures show that on average:

- under all charging options, New South Wales operators would experience the smallest percentage increases in costs (including a decrease in costs under one option), primarily reflecting the higher charges they currently pay

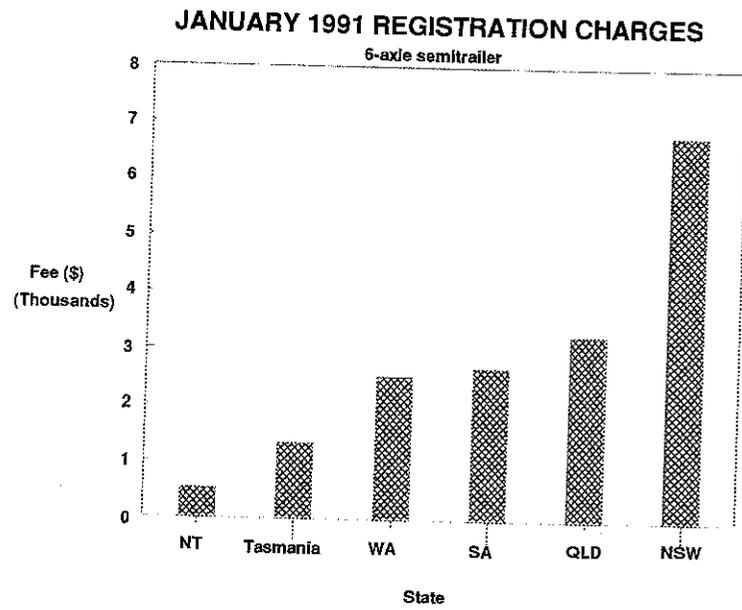


Figure 2 January 1991 registration charges by State for a 6 axle semitrailer

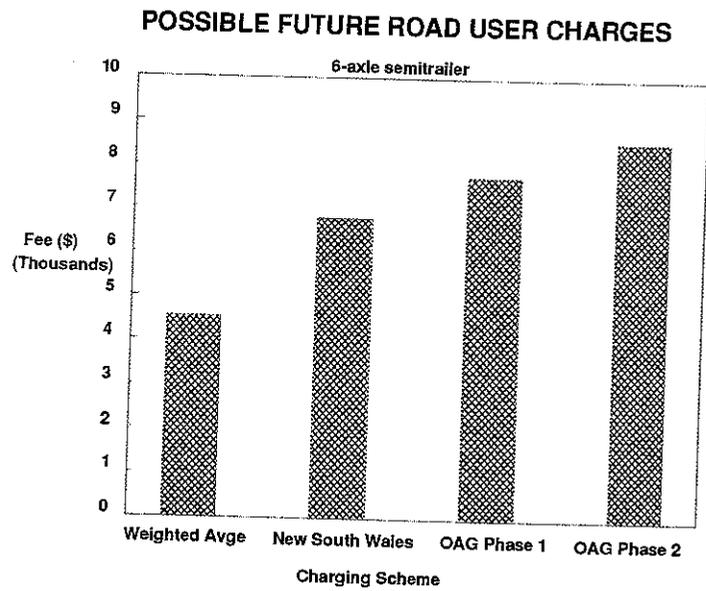


Figure 3 Possible future registration charges for a 6-axle semitrailer by charging scheme

Table 1 CHANGE IN OPERATING COST FOR A 6-AXLE SEMITRAILER

STATES	WEIGHTED AVERAGE FLAT RATE	NSW DISTANCE BASED	OAG PHASE 1 FLAT RATE	OAG PHASE 2
		per cent dollars		
NSW	-1.0 (-2 273)	1.8 (4 048)	0.4 (956)	2.9 (6 722)
SA, WA, Qld	1.0 (1 837)	3.6 (6 712)	2.7 (5 066)	4.8 (9 063)
Tas	3.0 (3 196)	4.1 (4 457)	6.0 (6 425)	5.6 (6 000)

-South Australian, Western Australian and Queensland operators would experience roughly similar, and an intermediate level of percentage cost increases, primarily reflecting their broadly similar current level of charges

-Tasmanian operators would experience the greatest percentage increase in costs under all charging options, primarily reflecting their current low level of charges

-Northern Territory operators are not shown in table 1 as 6-axle semitrailers are not a representative remote area freight vehicle in the Territory, however current Northern Territory charges are even lower than Tasmanian charges (see figure 2)

-flat rate charges would produce smaller percentage increases in costs than distance based charges in New South Wales, South Australia, Western Australia and Queensland. The converse is true in Tasmania. This result primarily reflects the finding that Tasmanian remote area road users tend to travel less than national average annual kilometres for their respective vehicle classes, while New South Wales, South Australia, Western Australia and Queensland remote area road users tend to travel more than national average annual kilometres

-a given increase in absolute charges represents a higher proportion of annual operating costs in Tasmania than in any other State.

It is always true that (even for a single vehicle type) any given charging option will produce divergent effects on operators across the States and also divergent effects on operators within a State.

An Example of Impacts Across Vehicle Types

Table 1 presented some of the effects of different charges across States, for a single vehicle type. Figure 4 provides an illustration of the effects of different charges across different vehicles, for a single State, in this case New South Wales. The figure illustrates that any given charging option will usually produce divergent relative effects across varying vehicle types (even within a State).

The Effects of Road Train Discounts

OAG Phase 1 charges incorporate a 50 per cent discount for road trains which was recommended to be gradually phased out upon the introduction of the essentially distance based OAG Phase 2 charges. In this study, OAG Phase 2 charges are those assumed to apply after the 50 per cent discount has been withdrawn.

The BTCE survey showed that in Queensland, South Australia, Western Australia and New South Wales there were instances of semitrailers, B-doubles and road trains operating, and sometimes competing, over similar routes. Figure 5 shows the impact of OAG Phase 1 (distance based) and Phase 2 charges on semitrailers and double road trains in Queensland, South Australia and Western Australia. Reflecting the 50 per cent road train concession, the proportionate impact of OAG Phase 1 distance based charges on the operating costs of road trains in these States is approximately half that imposed on the operators of semitrailers. The result is not exactly half in each case because of variations in annual distances travelled, annual operating costs and the current levels of State charges. A broadly similar result is obtained when the effects of OAG Phase 1 flat charges are compared, although in this case the distortion associated with the concession is superimposed on the variable impacts on annual operating costs that result when a constant "average" charge is applied irrespective of the extent of road use.

The value of the 50 per cent concession to road train operators can be very large and is illustrated by the difference between the Phase 1 distance based charge and the Phase 2 non concessionary (85th percentile) charge shown in figure 5. In Queensland, the concession results in the impact on operating costs being reduced from around 10 per cent to around 1 per cent. This "multiplier" effect primarily results from the 50 percent concession reducing OAG Phase 1 charges to near the current State charges. For semitrailer operators, with no concessions, there is little difference between OAG Phase 1 distance based charges and OAG Phase 2 charges, as would be expected.

Range of Impacts on Vehicle Operating Costs at the National Level

Table 2 provides an indication of the range of impacts to be expected on full time commercial vehicle operators in rural and remote areas, for all of the selected hypothetical charging options. The table identifies the vehicle type that is least affected, and the vehicle type that is most affected in each State and Territory, by the average impact of the seven hypothetical charges. Because a given vehicle type can be amongst the least affected by one scheme and among the most affected by another scheme, some of the vehicle types identified in the left hand column of the table would change if the table was prepared on the basis of a single selected charging option. However, the general order of the impacts shown would not change, indicating a similar range of impacts in each State, but possibly across different vehicle types.

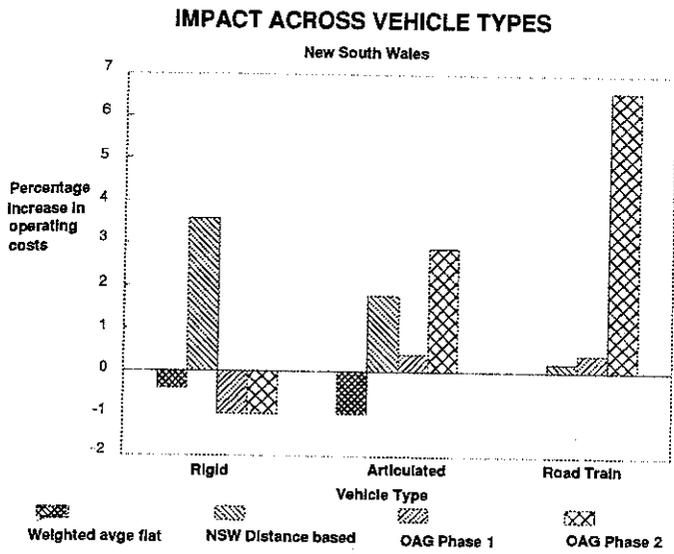


Figure 4 The effects of different potential road user charges across different vehicles

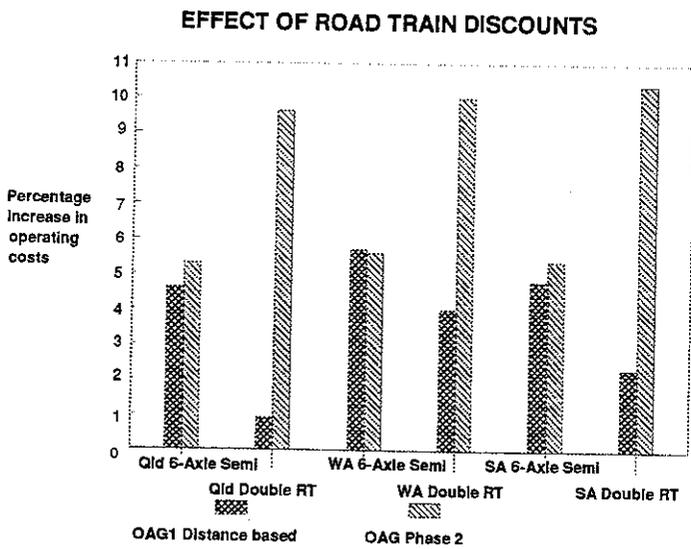


Figure 5 The effect of discounts on the impact of road trains relative to other heavy vehicle types.

Table 2 PERCENTAGE CHANGE IN VEHICLE OPERATING COSTS - AUSTRALIA^a

Route and vehicles	OAG PHASE ONE		OAG PHASE TWO	WEIGHTED AVERAGE OF STATE CHARGES		NSW CHARGES	
	Flat charge	Distance based		Flat charge	Distance based	Flat charge	Distance based
	(per cent)						
NEW SOUTH WALES							
3-axle 12-tonne flat top rigid	-1.4	-1.0	na	-0.5	1.9	0.0	3.1
Flat top double road train	0.4	0.7	6.6	na	na	0.0	0.2
QUEENSLAND							
Refrigerated double road train	0.9	1.8	7.1	na	na	0.6	1.4
Refrigerated B-double	3.4	5.8	7.0	1.5	3.0	3.6	6.1
SOUTH AUSTRALIA							
6-axle refrigerated semitrailer	2.0	3.7	4.2	0.7	1.8	1.6	3.2
Flat top B-double	3.1	5.7	6.9	1.4	3.0	3.3	6.0
TASMANIA							
6-axle semitrailer tanker	3.6	2.3	2.7	1.8	1.0	3.1	1.9
3-axle rigid tupper/2-axle pig	8.6	7.1	4.3	1.1	2.5	3.1	5.7
WESTERN AUSTRALIA							
Refrigerated double road train	0.9	3.7	6.2	na	na	0.7	3.3
Flat top double road train	1.5	4.0	10.0	na	na	1.1	3.5
NORTHERN TERRITORY							
Triple road train (refrig)	2.0	4.5	9.0	0.6	1.5	na	na
Double road train (pantech)	3.4	5.6	14.3	na	na	2.9	5.0

a. Ranked in terms of average impact.

Very broadly, the impact of OAG schemes Phase 1 and Phase 2 would be to vary vehicle operating costs nationally between about -1 per cent to +10 per cent, with some instances of up to +15 per cent in the Northern Territory. A move to uniform weighted average State charges would produce the smallest effects on operating costs, usually of the order of +1 per cent or +2 per cent. (Some New South Wales operators would experience a decrease in costs of the order of 0.5 per cent under the flat charge option.) A move to current New South Wales charges would increase costs for other State operators by about 3 per cent, very roughly.

Concluding Comments

The disparities between the relative effects of alternative charging systems, and within any individual charging system, prevent any simple statement of the potential impacts of national road transport reforms on rural and remote Australia. The study suggests that the implications of almost any altered scheme are likely to be appreciable to at least some discrete categories of rural and remote area vehicle users.

As a general rule, however, the OAG charges would impose more and larger cost increases upon vehicle operators (and their customers) than the introduction of New South Wales charges than, in turn, weighted average State charges. It is possible to find counter examples to this generalisation, so that not all vehicle operators would rank the effects in this order. Distance based schemes tend to operate against the interests of operators in those States and Territories where annual distances travelled are often high. Fixed rate (unrebated) schemes tend to operate against the interests of Tasmanian operators and other individuals in all States whose annual distance travelled is below average. Whenever annual distances travelled differ appreciably between road users, any flat charge scheme will comparatively disadvantage the lower distance road users, the extent of the disadvantage increasing with the size of the fixed charge. Each type of scheme has its own administrative, efficiency, enforcement, equity and other trade offs that fall outside the scope of this study.

The results of the study did highlight the substantial inequities that would be caused by the incorporation of concessions limited to road trains under the OAG Phase 1 scheme and early stages of the OAG Phase 2 scheme. Under these schemes, the operators of semitrailers and B-doubles in Queensland, Western Australia, South Australia and New South Wales, would experience percentage increases in annual operating costs roughly twice as large as those faced by the operators of road trains.

NRTC charges

Under the June 1992 NRTC recommended charges, representative rural and remote area heavy vehicle operating costs would rise by between 1.4 per cent and 2.9 per cent in Tasmania and the Northern Territory, and rise by between 0.2 per cent and 1.1 per cent in Queensland, South Australia and Western Australia. Representative rural and remote area heavy vehicle operating costs would fall by up to 1.3 per cent in New South Wales.

Queensland Broadacre Farms

This section addresses the effects that altered road user charges might be expected to have on the heavy vehicle operations of Queensland broadacre farmers.

In 1990 the Queensland Department of Transport commissioned ABARE to undertake a one off survey of Queensland farm vehicle ownership and operation, in conjunction with ABARE's national annual survey of broad acre farms. The data collected in the survey is among the most detailed available on Australian farm trucks. It is also one of the few sources which can be used to estimate how registration charges affect a particular group of vehicle owners. For these reasons a case study was undertaken on how the Queensland broadacre industry would be affected by the seven charging scenarios. The provision of the aggregate survey data by the Queensland Department of Transport to the BICE for the purposes of this study is gratefully acknowledged.

Methodology

The ABARE survey covered farms that were in one of the five industries known collectively as broadacre agriculture. These industries are wheat and other crops, mixed livestock-crops, sheep, beef, and sheep-beef. The survey results were analysed at the State level and by three geographic zones defined by the principle land use: pastoral zone, wheat-sheep zone, and high rainfall zone. For the State and for each zone, approximate estimates of the operating costs of representative vehicles were derived from the Austway model and the impact of all seven possible road use charges on vehicle operating costs was analysed using the spreadsheet previously described. These data were combined with data on farm cash income for the relevant properties to analyse the impact of any changes to charges on the primary producer.

Profile of truck use

In 1989-90, 53 per cent of all broadacre farms had a two axle rigid truck, 18 per cent had a three axle rigid truck and approximately 9 per cent of broadacre farms owned a semitrailer. In the wheat-sheep and high-rainfall zones, 5 and 6-axle vehicles dominated the semitrailer fleet. In the pastoral zone there was an even distribution between 4, 5 and 6-axle vehicles.

Annual distances travelled by Queensland broadacre farm trucks were, on average, relatively low. In the case of rigid trucks, it appears Queensland broadacre vehicles travel annual distances which are, on average, less than half that reported for the nation as a whole. For semitrailers, farm vehicles travel annual distances which are only about 10 per cent of the national average.

Caution needs to be used when interpreting average distance estimates from the survey. Because only a small number of farms are used to produce the survey estimates, there is a relatively high degree of sampling error. Even after allowing for these errors, however, it remains apparent that farm vehicles travel distances well below the corresponding average of those used outside the agricultural sector.

Representative vehicles analysed

Primary producers are an important case study because they currently receive a range of vehicle fee reductions not given to most road users. Consequently, they could be among the most adversely affected by a change in registration arrangements not incorporating relevant rebates.

Rather than calculate the effects on each individual farm, cost changes were analysed for five representative vehicle types in each zone. These vehicles and the associated registration charges for Queensland primary producers as at 1 January 1991 are as follows:

Rigid truck (2-axles)	\$284
Rigid truck (3-axles)	\$464
Semitrailer (4-axles)	\$748
Semitrailer (5-axles)	\$814
Semitrailer (6-axles)	\$1003

These registration charges include the 75 per cent up-front rebate which Queensland farmers receive for all heavy vehicles except articulated vehicle trailers, which in all cases cost \$250 to register.

The charges shown do not include compulsory third party insurance or any additional miscellaneous charges levied by the Queensland Department of Transport. These are assumed to remain unchanged under any new scheme.

Estimation of vehicle operating costs

Information from the ABARE survey was insufficient to generate definitive estimates of vehicle operating costs. In particular, no data were available on vehicle age, which has a significant effect on items such as depreciation, insurance, fuel, repairs and maintenance costs. It was expected that many farm trucks would be past their economic life for applications outside the specialised case of low distance farm use. For example, Blyth, Noble and Mayers (1987) noted that farmers often used trucks which were more than 15 years old. It was also uncertain to what extent repairs and maintenance might be undertaken on farm, using farm labour and possibly secondhand parts.

Estimates of the value of farm trucks were based on prices and descriptions taken from classified advertisements in rural newspapers. Broad estimates of operating costs were made based on the assumption that all farm trucks were old. All cost estimates were made in January 1991 dollars. Given the sweeping nature of the assumptions used, and that the Austway model is designed for specialised road transport operations, the resulting cost estimates could contain appreciable errors. Consequently, estimated percentage changes in vehicle operating costs caused by possible variations in road charges should be interpreted with caution.

It should be noted that these problems do not occur with estimates of changes in registration costs. Information required for these estimates, such as vehicle types used and current registration fees, was readily available from the ABARE survey and Queensland Department of Transport.

Effect of charging scenarios on vehicle operating costs

The proportionate changes in vehicle operating costs that would occur under each of the seven hypothetical charging scenarios are shown in figure 6

For the OAG Phase 2 scenario, charges were available only for six axle semitrailers and two axle rigid trucks. For six axle semitrailers, vehicle operating costs could rise by about 2 per cent at the all zones level compared to current costs. Operating costs could fall by about 9 per cent for two axle rigid trucks

Comparison of the effects of the flat charges proposed by Overarching Group (1991) for the first phase of its proposed scheme (OAG Phase 1 flat) with the same charges apportioned on the basis of actual road use (OAG Phase 1 km) highlights the differing effects of flat and distance based charges. The extreme example of this is a 5-axle semitrailer, whose operating cost rises by 104 per cent with the flat charge but only 6 per cent with the distance based fee. Since the distance based OAG charges were designed to reflect road damage costs, the relatively small impacts associated with distance based OAG charges suggest that present Queensland charges for primary producers may be reasonably close to the level required to recover road costs

The relative impact on vehicle operating costs of the OAG Phase 1 flat fee scenario usually increases with vehicle size and decreases with the extent of annual distance travelled. These relationships between the relative impact, vehicle size and annual distance are shown in figure 7.

Like OAG Phase 1, application of the weighted average of state charges as a flat fee would lead to much greater cost increases than its distance based counterpart. However, the percentage cost increases would vary less between vehicle types than OAG Phase 1 flat charges.

The two charging scenarios based on New South Wales fees (without rebates) have similar effects to their counterparts using the weighted average of state charges (without rebates) However, the rise in costs is always greater because New South Wales has the highest state registration fees

Effect of cost increases on industry income

Table 3 shows the impact of altered charges (using average annual distances) expressed as a proportion of 1990-91 broadacre average farm cash income. Farm cash income is defined as the difference between total cash receipts and total cash costs and can vary substantially from year to year. The percentage increases calculated provide an indication of the relative impact of altered charges in just one year, the most recent for which data were available. Note that that impact could be appreciably different in another given year. For example, average farm cash income in 1989-90 for the pastoral zone (\$103405) was much higher than in 1990-91 (\$67904). Conversely, average farm cash income in 1989-90 for the high rainfall zone (\$21202) was much less than in 1990-91 (\$34287). Incomes for the wheat sheep zone did not vary greatly between these two same years (\$32299 and \$31980 respectively).

In 1990-91, the greatest potential impacts would have tended to occur in the wheat-sheep zone because of its higher incidence of relevant farm vehicle ownership and because it had the lowest average farm cash operating surplus in 1990-91 of \$31 980. The estimated impacts range from a 5.9 per cent income reduction under New South Wales flat charges in the wheat-sheep zone to a 0.7 per cent increase under the distance based weighted average of state charges in the same zone.

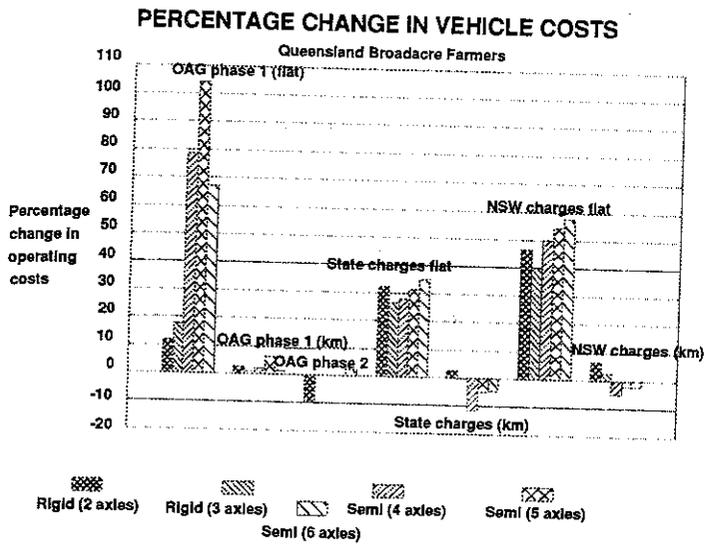


Figure 6 Relative change in vehicle operating costs for each type of farm truck under each charging option

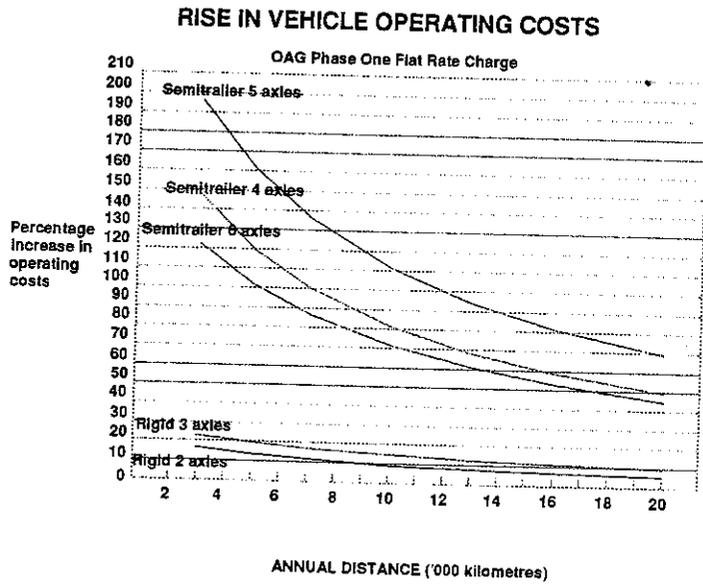


Figure 7 Relative change in vehicle operating costs for each type of farm truck under OAG Phase 1 flat rate charges over a representative range of distances.

Table 3 POTENTIAL CHANGES IN QUEENSLAND BROADACRE AVERAGE FARM CASH INCOME 1990-91
(by charging scenario)

	OAG PHASE ONE		OAG PHASE TWO ^a	WEIGHTED AVERAGE OF STATE CHARGES ^b		NSW CHARGES ^b	
	Flat charge	Distance based		Flat charge	Distance based	Flat charge	Distance based
Pastoral	-1.1	0.0	0.1 (per cent)	-1.3	-0.1	-1.9	-0.2
Wheat-Sheep	-4.0	0.3	0.1	-3.9	0.7	-5.9	0.6
High-Rainfall	-2.4	-0.1	0.1	-2.6	-0.2	-3.9	-0.5
All Zones	-2.7	0.1	0.1	-2.8	0.3	-4.2	0.1

^a This is an underestimate because OAG Phase 2 charges were available only for two axle rigid trucks and six axle semitrailers.

^b As at 1 January 1991.

Concluding comments

The impacts of the seven charging scenarios analysed depend heavily on the composition of the truck fleet and its use. Use of distance based registration charges would have in all cases resulted in relatively minor changes, while flat fee charges would have in all cases resulted in quite appreciable increases. If the OAG Phase 1 and 2 distance based fees approximate the actual cost of road use per kilometre, then this suggests that current Queensland charges (with primary producers rebate) may be reasonably close to the level required to recover road costs. If this is the case, then primary producers could be significantly overcharged by any of the hypothetical flat rate schemes (excluding rebates), which all result in significant increases in vehicle operating costs. Under such schemes, broadacre farmers would be subsidising those who make more extensive use of public roads.

NRIC charges

Under the June 1992 NRTC recommended charges, Queensland farmers would face increases in vehicle operating costs ranging from about 5 per cent for some rigid farm trucks to about 40 per cent for some articulated farm trucks. At the all zones level, these increases would raise broadacre industry costs by about \$5.4 million. This would represent a decrease of about 1.1 per cent in average farm cash incomes in 1990-91.

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