

SUBMISSION TO NATIONAL ROAD TRANSPORT COMMISSION RE THIRD DETERMINATION OF ROAD USER CHARGES - SEPTEMBER 2003

INTRODUCTION

The Railway Technical Society of Australasia (RTSA) is a technical society of the Institution of Engineers, Australia (IE Aust). The RTSA now has over 800 members and hosted a major Conference on Railway Engineering in November 2002 at Wollongong with over 400 participants. The present submission outlines member concerns and draws on submissions to various Federal and State transport inquiries along with two earlier submissions to the Commission. These submissions have supported competitive neutrality, which includes the provision of improved rail track infrastructure. The RTSA also supports the proposals in the Federal Government's AusLink paper as a starting point for long overdue land transport reform in Australia.

GENERAL COMMENTS RE ROAD PRICING

1. The RTSA supports the Neville Committee's (1998) recommendation "*... that the Commonwealth develops a more consistent, equitable approach to transport infrastructure charges to ensure competitive neutrality between modes.*"

As stated by the Bureau of Transport Economics 1999 Working Paper No 40 'Competitive neutrality between road and rail' on page xi, "*Under the current road user charging system, trucks overall are undercharged for their use of the road system. Moreover, larger more heavily laden vehicles and those travelling larger distances are charged the least (per tonne kilometre) while smaller, less heavily laden vehicles and those travelling shorter distances cross-subsidise them.*"

2. Along with a fuel 'tax' component, some form of mass distance charge, or increased annual charges for the heavier trucks running longer distances, is needed to redress this imbalance. The RTSA notes a detailed 2001 submission to the Fuel Taxation Inquiry from the Bus Industry Confederation (BIC) which in part states that "*...the main transport external costs are those of road damage, congestion, accidents and environmental damage, especially air pollution, noise and climate change (greenhouse gas emissions) and the major origin of these costs is road use.*"

BIC did not give estimates of under-recovery of road system costs for heavy vehicles but proposed "...that the Australian Transport Council should ... direct the NRTC to report on implementation of a mass-distance based charging system for heavy vehicles, to replace the current NRTC charging system."

The RTSA supports this approach.

The RTSA also supports the Fuel Taxation Inquiry recommendation of an inquiry into external environmental costs of road vehicle usage.

3. **More consideration needs to be given to the social and environmental costs of road freight than that given by the NRTC up to 2002.** These include the cost of road crashes involving heavy trucks along with the costs of noise and air pollution in urban areas. It is recognised that rail freight also incurs external costs. The ARTC National Track Audit has a Table which gives some estimates of these costs.

Table : Booz•Allen & Hamilton Track Audit Externality Costs

Externality Measure	Road (c/ntk)	Rail (c/ntk)
<u>Noise pollution</u>		
Rural	0.003	-
Metro	0.006	0.004
<u>Air pollution</u>		
Rural	-	-
Metro	0.11	0.03
<u>Greenhouse gases</u>	0.16	0.01
<u>Congestion costs</u>		
Rural	-	-
Metro	0.09	-
<u>Accident costs</u>		
Rural	0.32	0.03
Metro	0.32	0.03
<u>Increased. road maintenance</u>		
Rural	0.64	-
Metro	0.64	-
TOTALS Rural	1.123	0.04
Metro	1.326	0.074

Source : ARTC TRACK AUDIT, Appendix A, page 24, Table 24.

These estimates, which in most cases, refer to work done by the Bureau of Transport Economics in its 1999 report (and in turn the former Inter-State Commission in a 1990 report for environmental externalities which refers to US work of the early 1980s) may well be conservative. Moreover, the greenhouse gas estimates appear to be in error. A Queensland Transport sponsored publication and study '*Land Freight External Costs in Queensland*' by P Laird suggests that if a value of \$25 per tonne is taken for carbon dioxide, then greenhouse emission costs are as follows: urban road freight at 0.20 cents per net tonne km, non-urban road freight at 0.17 cents per net tonne km and rail freight at 0.064 cents per net tonne km.

4 In regards to under-recovery of road system costs from articulated trucks, a book *Back on Track: Rethinking transport policy in Australia and New Zealand* by Laird, Newman, Bachels and Kenworthy (2001 UNSW Press) notes aggregate under-recovery of road system costs from articulated truck operations at about \$1.2 billion in 1997-98 (page 82 and Appendix D). This averages out at 1.25 cents per net tonne km.

The average cost of road crashes involving articulated trucks as discussed in the Queensland Transport study. Based on the BTE 2000 report *The cost of road crashes* estimates, an average cost of 0.5 cents per net tonne is suggested. For rail, based on the Queensland Transport study and the BTRE *Rail accident costs in Australia* (2003) it is suggested that for the present, the earlier estimate of 0.03 cents per tonne-km for rail freight in Australia be maintained.

It is appreciated that such estimates are assumption sensitive and subject to data limitations. However, RTSA agrees with the Track Audit findings that the road external costs would warrant a charge of least 1.12 cents per net tonne kilometre (non-urban). Based on average fuel use by articulated trucks and their freight output in the late 1990s of about 36 tonne km per litre, this equates, on average, to a hidden road transport subsidy of about 40 cents per litre. Prior to 30 June 2000, when road diesel excise fell from about 43 cents a litre to just 20 cents a litre as part of the New Tax System, some external costs were recovered by the Federal Government.

Rail external costs are much lower at about 0.04 cents per tonne km (non-urban). Based on typical rail freight output of 120 tonne km per litre, an externality charge of about 5 cents per litre is warranted for rail.

5. As well as the 1999 report of the Bureau of Transport Economics 1999 *'Competitive Neutrality between Road and Rail'*, a series of Government reports in the 1970s and 1980s also acknowledged under-recovery of road system costs from the heavy truck operations.

The Society notes that for roads of light construction, as previously recommended by the NSW Roads and Traffic Authority in 1990 (see Industry Commission 1991 report on rail, p116) an amount of 3 cents per net tonne km would be appropriate as an additional road user charge when significant tonnages are involved that cause damage to local roads.

Support for the view that Local Government should be able to recover road pavement costs and other externalities is also given by the Industry Commission, which in their final 1991 report on Rail Transport recommended, inter alia:

"... that State and Territory laws be amended to provide local governments with effective capacity to impose specific pavement damage and externality charges on heavy vehicles. Such charges should be levied the principals for whom the road haulage is provided. A process of appeal should be set up to settle disputes between the local authority and the principles responsible for the pavement damage or externalities." (Vol I, p117).

After 12 years, progress is yet to be made with this recommendation.

Moreover, the Industry Commission in its 1991-92 Annual Report (p197-198) noted, inter alia: *"Annual fixed charges are not efficient because costs vary with the distance travelled and the mass of the vehicle. The result is that some vehicles - the heaviest travelling long annual distances - will meet less than 20 per cent of their attributed costs. Charges for heavy vehicles that reflect costs they impose are essential to ensure best use is made of the nation's road and rail infrastructure, and that industry location decisions are appropriate in terms of minimising the overall cost of economic activity. Differences between the recommended charges and road-related costs are greatest for vehicles competing with rail. The charges, as recommended, will therefore potentially distort the long-haul freight market as rail reforms take effect."*

The Society trusts that the 'third generation' of charges will address these concerns.

6. The Society notes the address by the Secretary to the Treasury, Dr Ken Henry to the BTRE Colloquium in Canberra on 4 October 2002. Of particular note is that even *"relatively*

modest rates of growth in urban traffic raise important issues, especially of urban congestion and, of course, urban air quality. And truck traffic projections raise questions about the capacity and quality of maintenance of our highways." (emphasis added)

"Not dealing with these issues now amounts to passing a very challenging set of problems to future generations."(emphasis added)

Dr Henry's speech later noted that, "... broadly, there are two dimensions of possible regulatory change. *"The first looks to the demand side and enquiries about the price signals confronting users of transport infrastructure. The second looks to the supply side and enquires about the systems for financing new transport infrastructure.*

"The former inquiry is really about discovering the scope for moving user prices closer to the social marginal costs of usage. Most of the possible action here concerns road transport."

The Society submits that NTC should attempt to bring road user charges nearer to the total costs imposed on the community, and, to improve competitive neutrality between road and rail track access pricing. This will assist in both road vehicle demand management, and generating the additional revenue acknowledged (in page 32 of the Government's Green Paper on AusLink) as necessary to maintain and improve the transport network's performance.

7. It is of note that since 1978, New Zealand has had in place a system of mass - distance road user charges for heavy vehicles. Switzerland has also had truck kilometre charges since 2001 (see Appendix A), with part of the proceeds forming 45 per cent of a 30 billion Swiss Frank rail development fund. As noted by the BTE Report 105 "Greenhouse Policy options for transport" (p96), Germany has approved the introduction of a kilometre based highway fee for heavy trucks, with **almost two fifths of the expected \$A6 billion raised each year by the levy being applied to rail projects.** It is understood that the levy is about 20 Eurocents per kilometre for a heavy truck, and although being twice delayed in 2003, that it will commence later in 2003.

8. RTSA would hope that the third determination can reduce the cross subsidisation of high tonnage high kilometre trucks by low tonnage and/or low km trucks by some differentiation in mass and distance charges. RTSA does not expect something as detailed, or

at such high levels, as the NZ scheme, in the third determination, but hopes that there will be some basic mass differentiation (even two levels as with the FIRS scheme of the late 1980s would be a step forward) and distance differentiation. Here, even two levels would be a step forward - say one for articulated trucks under say 20,000 km per year (those with pick up and delivery work) and the higher charges for the rest of the fleet.

COMMENTS ON THE NTC PRICING DETERMINATION:

The issues paper of the Commission notes four pricing objectives and sets out a series of requests for comments. The four objectives follow.

1. Heavy vehicle operators take account of infrastructure costs in their choice of vehicle and vehicle use decisions (initially for those obtaining additional mass or access and possibly for other more highly utilised classes of vehicles).
2. Revenue obtained from heavy vehicles meet costs of providing and maintaining infrastructure for their use.
3. The pricing system avoids operators shopping around for lower prices for the same access to the road network.
4. By ensuring that prices for use of the road system reflect the costs of providing and maintaining that system, providing a more neutral environment in which decisions about modal choice are made.

The NTC 31 questions and RTSA comments in response to these questions follow.

1. The four suggestions for the objectives that should underlie heavy vehicle road pricing.
Would like to see inclusion of charges with mass-differentiation and distance differentiation and consideration of external costs.
2. Whether there is widespread support for using heavy vehicle pricing to achieve these objectives.
There is community support for less 'loads on roads and for more equitable road user charges.

3. The principles that should be recommended to the ATC to guide the development of the 3rd Heavy Vehicle Road Pricing Determination.

As in 1 above

4. What forms of variable charging mechanisms should be explored in the 3rd Determination?

Charges with mass-differentiation and distance differentiation; at least in the populace zone

5. Whether it is more important for charges to vary with vehicle travel, vehicle loading, types of roads used or some other factor.

All factors, plus axle configuration, are important

6. Rather than relying solely on travel and average gross mass, whether attempts should be made to take account of vehicles travelling high annual kilometres as well as the full loading patterns of different vehicles.

Yes

7. Whether there are cost-effective, fraud proof systems of levying lower charges for low use vehicles that should be re-explored as part of the 3rd Determination?

Yes. Simply offer rebates to low kilometre vehicles and extend Safe-T-Cam nationally to assist in compliance. Could offer quarterly or even monthly charges to all heavy vehicles to make it easier to meet payments, and also move between a truck operator changing between 'normal' and low kilometre vehicles.

8. The proposal that congestion pricing initiatives will not be included in the 3rd Determination.

RTSA considers some road congestion charges could be included, or at least put on notice for consideration in a 4th determination.

9. The proposal that air quality pricing will not be included in the 3rd Determination.

RTSA considers some air quality pricing should be included – particularly for urban areas. This could also extend to rail. Failing this, air pricing should at least put on notice for consideration in a 4th determination.

10. The proposal that noise pricing will not be included in the 3rd Determination.

As per 9 above.

11. The proposal that pricing initiatives to reduce heavy vehicles' greenhouse gas emissions should not be included in the 3rd Determination.

As per 9 above.

12. Whether expenditure on heavy vehicle enforcement activity should be included in the expenditure recovery target for heavy-vehicle road-use prices?

Yes.

13. The proposal that other external costs such as hospital costs, insurance administration and ambulance costs should not be included in the cost recovery target?

As above in 9 above, RTSA considers more transport costs should be internalised.

14. How can problems in relying on SMVU data best be overcome?

RTSA suggests frequent SMVUs with appreciably larger samples, also some resources be given to cross checking results with data produced by the State Road Authorities, with more information placed in the public domain.

15. What priority should be placed on updating the formulae for estimating ESAs from gross vehicle mass to reflect changes in the distribution of loads across axles and the emergence of new vehicle configurations?

Should keep to ESAs with the fourth power law.

16. Should any variations to the calculation of ESAs be made ahead of research to verify the power rule and load equivalencies currently used in the calculations?

Should keep to ESAs with fourth power law; also more use should be made of ESAs in determining costs attributable to heavy vehicle operations.

17. Whether current estimates of Passenger Car Equivalent Units should be used in the 3rd Determination, or should more sophisticated estimates that vary with road and traffic conditions be developed?

Current estimates adequate if fraction of PCEUs does not increase.

18. Whether SMVU estimates of fuel consumption rates should be supplemented by additional information, and if so, from what source?

Yes; more research needed here, plus less reliance on fuel charges for road costs.

19. Whether disaggregated data on road expenditure would be available with sufficient accuracy to use in pricing heavy vehicle road use.

Better data is needed.

20. The proposal to retain the PAYGO approach to determining the costs of providing and maintaining roads for the 3rd Determination.

PAYGO does not really offer money upfront for massive highway upgrades or even the additional costs required when extra lanes or rigid pavements are provided to accommodate heavy vehicle traffic. We would support a move to more life cycle costing.

21. Whether non-separable costs should continue to be distributed between road users on the basis of distance travelled, as a proxy for the amount of the network accessed?

Would much prefer the use of PCEUs as opposed to vehicle kms.

22. Whether there are alternative sources of information on the relationship between road use and the need for road expenditure that could be used to inform the attribution rules used.

No comment.

23. How expenditure on upgrading bridges associated with providing for higher mass limits should be treated in the 3rd Determination.

Prefer no further relaxation of mass limits until road cost recovery is improved and the question of funding bridge upgrades is addressed.

24. Whether you are aware of any previous work that would assist in reviewing the attribution rules for expenditure that does not relate to pavements or bridges.

Unable to comment.

25. How a data collection exercise to allow separate cost allocation parameters for local roads to be derived should be resourced.

By road users.

26. Whether, in the absence of data that allow separate cost allocation parameters for local roads to be derived, there should be any changes to the approach to estimating heavy vehicles' share of local road costs?

As per 1991 Industry Commission recommendation (above), there should be ability for State and Local Government to recover these costs when significant tonnages are involved.

27. Whether consideration should be given to developing a national framework for locally applied local road use charges, either in place of or in addition to the Commonwealth/State/Territory levied charges that currently apply?

As discussed above and by the 1991 Industry Commission Report on Rail/

28. Are there any better ways of obtaining local roads expenditure estimates by type of road work?

No comment.

29. Whether you are aware of any other sources of information that would assist in improving estimates of local road use.

No comment

30. What are the impacts of the fundamental differences in approaches to pricing heavy vehicle road use and rail track access?

Significant at the present arrangements are a factor in placing more contestable freight onto road.

31. What impact would changes to the relativity of road and rail cost recovery be expected to have on freight demand and freight movements?

Depends on the degree of increase in road cost recovery from heavier long distance articulated trucks. Other facts include the substandard condition of part of the interstate track between Melbourne, Sydney and Brisbane.

Appendix A Foreword from the publication "Fair and efficient - The Distance-related Heavy Vehicle Fee (HVF) in Switzerland"

The HVF: key to a sustainable transport policy

Switzerland introduced the new, distance-related heavy vehicle fee (HVF) on schedule, on the 1st January 2001. The HVF is a key element on the route to a sustainable transport policy.

It is a feature which the general public desire and which has been approved in several votes. The HVF will mean that pollution and damage caused by heavy goods traffic will increasingly be paid for by the polluters.

Environmental pollution will thus be reduced and a brake put on the growth in lorry traffic.

A large proportion of the income will be used to modernise the railway network. Since it will benefit from the better transport infrastructures, it is only fair that heavy goods traffic should also contribute to their funding.

The interim balance a year after the HVF was introduced is positive. There were practically no problems in introducing the fee, the system is running smoothly and the trend towards an ever-increasing number of lorries on the roads has been broken. This can also be confidently taken as in order with regard to 2005, when the HVF will come fully into force after the fee is increased.

Federal Council Minister
Moritz Leuenberger

Chairman of the Federal Department of the Environment, Transport, Energy and Communications (DETEC)

The publication may be found from «Fair and efficient» at the following website:
<http://www.are.admin.ch/are/en/verkehr/lsva/index.html>

This report notes, inter alia, that "Between 1970 and 1997 the transport performance of heavy goods traffic in the 15 EU countries tripled, from 412 to 1200 billion tkm. At the same time, the road share of the total freight transported increased from 48 to 73 per cent... All forecasts indicate that goods transport in the EU and Switzerland will increase further by several per cent annually. Political measures have a substantial influence on the distribution according to the modes of transport..."

"In the absence of the HVF and complementary measures, an increase in the weight limit would have led to a doubling of heavy goods traffic on the Swiss road network by 2015. Switzerland intends to transfer heavy goods transport from road to rail, using the measures that have now been introduced."