CHARACTERISTICS OF COMMUNITY SERVICE OBLIGATIONS

E. MICHAEL,
Principal Research Officer,
Market Analysis Division,
Australian Railway Research and
Development Organisation.

ABSTRACT: *This paper re-examines the definition of Community Service Obligations in the light of recent debate, and looks at the confusions that have emerged between meeting a government directive, which may or may not have commercial connotations, and the provision of a service that meets a specific community need. It explores some of the implications of identifying community services, and seeks to establish the essential characteristics of community services and the means for distinguishing them from other railway operations or government imposed constraints. It concludes by reviewing the potential categories for community services by rail and the kinds of costs they might be imposing on the taxpayer.*

The paper clears the ground for further research on CSOs, particularly on the future development of approaches to funding CSOs from public sources.

CHARACTERISTICS OF COMMUNITY SERVICE OBLIGATIONS

(The material presented here includes the results of studies carried out within ARRDO between 1979-81. A number of ARRDO staff contributed to this work and their efforts are acknowledged.)

INTRODUCTION

The concept of public or community service obligations (CSOs) is not new, nor is it one that is applied only to railways. Nevertheless, it has proved elusive and difficult to apply in the Australian context. Theoretically the concept of CSOs appears to be particularly attractive to those government enterprises that are required to mix their pursuit of a commercial business with directions from governments to provide other non-profit-making services. The reality, however, is that governments of all persuasions have experienced great difficulty in clearly recognising the existence of any specific CSO.

The focus of this paper concentrates on the non-commercial role of the railways to fulfil specific aspects of social policy. It is emphasised from the outset that this approach rejects the argument that any rail activity which is currently performed in a non-commercial way is necessarily a CSO, rather it argues that CSOs are particular activities that can be tested and identified.

DEFINITION

The European View

In its earlier studies, ARRDO identified and used several different definitional sources to build a relevant concept of CSOs for Australia's circumstances. As these discussions have added considerably to the debate they are worth re-examination.

Initially public service obligations (for railways) were taken as those defined by the European Economic Community (EEC 1969) as:

> 'Obligations which the transport undertaking in question if considering its own commercial interest, would not assume or would not assume to the same extent or under the same conditions'.

This implies the notion that governments, as the proprietors of railways, impose constraints or directives on them to perform specific services, some of which would not be undertaken in the course of normal commerce because they would reduce financial returns or increase costs. The EEC's theme is that railways have the capacity to operate as a commercial enterprise once free from government interference and, therefore, they should be left to operate in a competitive market in the same manner as other transport industries.

On this basis the EEC Council of Ministers in 1969 decided in principle to terminate their railways' public service obligations and impose no new ones, except fare concessions to special groups (e.g. pensioners) or where their continuation was considered essential in the public interest. Financial burdens resulting from public service obligations were to be compensated by governments, the compensation to be determined by common procedures. The member states, however, have shown little inclination to curtail these impositions; on the contrary, they have increased them and the level of funding needed to cover the increasing deficits has risen substantially.

The EEC approach seeks to ensure that (government owned) railways and other transport enterprises are not protected by legislation against the operations of other enterprises, as this could jeopardise free trade within the Community and

provide economic advantages to particular industries in particular states through transport subsidies. Consequently, government obligations on railways to act in 'an uncommercial way' have been regarded by the EEC as justifiable only

> 'Where their continuation was considered essential in order to ensure the provision of adequate transport services' (ECMT 1976).

The Australian Development

The Australian transport environment, however, exhibits few of the European characteristics, and it has not generated the same pressures on governments to reassess their impositions on railways. CSOs have been seen more as a mechanism for management than as a fundamental aspect of transport economics.

In 1979 the Railways' Commissioners invited ARRDO to examine the CSO's issue, with the basic objective being to isolate non-commercial activities for financial review and policy analysis. Consequently, ARRDO defined the public service obligations of Australia's railways as:

> '...current requirements or constraints from government which, when satisfied in the most efficient way, still result in a financial loss to the railways' (ARRDO 1980).

This implies that public service obligations are constraints, tasks or directives placed upon a transport organisation by government which, in its own commercial interests, the transport organisation would not assume (or would not assume them to the same extent or under the same conditions). Further, logic suggests that as these tasks are non-commercial the effect of the obligation is to reduce the financial return to the organisation even when optimum levels of efficiency are achieved in their performance. The Australian interpretation clarifies and emphasises the notion that governments incur community service obligations and that railways, under direction, are merely the agents that fulfil the required tasks.

The notion that the railways are one of the implementing agents of government policy is relatively familiar: the rail transport task, in the Australian context, has long been viewed as a legitimate and functional means for governments to effect social and economic policy. However, the government railways are not constituted as departments for the administration of policy, except in Queensland. Rather, they are established as separate corporate and financial entities, albeit with management responsibilities to government. Their main role is the pursuit of commerce. This difference implies more than the matter of proprietorship: community ownership of an enterprise generates the same demands for effective management as does private enterprise, even though the public may impose other, perhaps conflicting, demands on government.

As these agents have a separate financial entity and management responsibility to the government and the community, then the essential corollary is that the railway, like any other enterprise, is entitled to be reimbursed by any government imposing a CSO to the extent of any reduction in financial return occasioned by each and every obligation, when performed in the most efficient way.[1] Thus, the significance of identifying and specifying public service obligations is as a tool for improving railway management and developing railway policy to limit growing deficits and the need for government funding.

---

[1] This statement evolved from discussions with BTE officers in 1981.

IDENTIFYING COMMUNITY SERVICE OBLIGATIONS

In Europe, community service obligations are seen most commonly as:

- the continued operation of passenger or freight services at a financial loss, but which are considered socially necessary;
- the imposition of fares and rates which are below the level to recoup costs or below the market rate that might return a profit; and
- the special requirements of governments to carry specified categories of passengers or freight, such as pensioners or military equipment.

In practice some rail managers argue that any requirement in the public interest which intrudes on a railway's commercial interests can be regarded as a CSO warranting financial compensation. The difficulty is that the wider constraints of government are difficult to isolate and specify. Disentangling and measuring the effects of these is a complex process and one that easily confuses the issues involved. The more common additions to the lists of constraints imposed by Australian governments, include:

- common carrier liability;
- limits on employment reductions;
- compulsory use of government services;
- restrictions on retention of revenues;
- restrictions on loan-raising; and
- no preference provisions (ARRDO 1980).

The term 'community service obligations' helps to focus attention on the issues which are of central concern to governments and railways; specifically, the community benefit derived from a given railway function. The implicit advantage is that a service can be measured in terms of its community benefit and judgments more easily made about rail as the most effective means to provide that service.

A community benefit can be viewed, in the context of transport services, as the result of a service provided to the community that is perceived to be of greater economic or social value than the financial burden the provision of that service imposes. The measurement of benefits, therefore, is relative to each situation and, while there are financial and economic limits to the provision of any benefit, there are circumstances in which some social considerations cannot be assessed in dollar terms. It follows that where governments feel obligated to provide certain types of community benefits and where the whole community contributes financially to its provision, then, social benefits derived from railway services must be either peculiar to that mode or more effectively provided by it than any other available means.

The pattern of constraints imposed by previous governments on railways can create sets of historical circumstances that lead to corresponding sets of public expectations about railways continuing to provide community benefits, despite the changing role of rail which no longer provides the funds to cross-subsidize these services from the 'commercial' functions. It thus becomes rail's task to expose and justify the services provided in the public interest which have not previously been identified by government directives, and to detail the benefits that the community accrues, in order to warrant financial compensation. Otherwise, the assumption must be that rail managers are operating those services for commercial reasons.

IMPLICATIONS

Nature of the Obligation

Since the foundation of the various Australian states, governments have accepted the responsibility to foster transport systems for the community. The first railways were built by entrepreneurs but they were rapidly taken over and extended by the various state governments 'in the public interest'. Despite the development and availability of alternative modes of transport over the past century there is little evidence of a decline in the community's expectation that its governments will provide an effective railway system for both passengers and freight in rural and urban areas.

The governments' commitments to provide services do not imply a lack of efficiency; the requirement is to provide transport services that are both efficient, in terms of cost-recovery, and effective in meeting the needs of people. In short, it is not an obligation to maintain rail services but to provide transport services that ensure the greatest benefit to the community. (It is even possible that deregulating private enterprise would result in a service that fulfils these goals.)

It is extremely difficult to argue that governments are obligated by the community to maintain a particular transport mode, although it may well be possible to demonstrate obligations to particular sectional interests. The provision of a rail service, therefore, cannot be interpreted as an obligation to maintain a particular mode if there are more efficient means to provide an effective service with equal or greater benefits. When a government continues to direct the provision of a service or function by rail, it must be demonstrated that the benefits derived from maintaining it outweigh the alternatives, either in economic, social or political terms.

Commercialisation

The purpose of the concept of community service obligations is to provide a mechanism that helps disentangle the commercial functions of a railway from its social or non-commercial roles. There is little agreement about a definition of 'commercial viability', but in practice railways regard it as generating sufficient revenue to recover avoidable costs and make a contribution of some sort to joint costs. (I prefer the minority view that commercial viability means a recovery above all attributable costs, despite the difficulties of full cost distribution.)

A non-commercial service is one that cannot generate sufficient revenue to cover avoidable costs. Non-commercial services can be reassessed in terms of the principles of the CSO concept, to distinguish between those that generate a discernable community benefit of greater value than the losses incurred, and those that generate a lesser range of benefits than are warranted by the costs involved, or which may be better provided by some other means or not at all. In short, the mechanism is available to identify the railways social services and distinguish between them and rail's other unprofitable activities.

The approach, however is not simple. A commercial service may produce substantial benefits to the community, or incorporate a number of non-commercial activities that are cross-subsidised. Some functions such as concession fares for passengers may, on a specific service, increase revenues by filling otherwise empty seats and can only be viewed as non-commercial where such concessions increase costs. Many railway functions are joint with a range of services, such as track maintenance, communications, workshops and administrative support. Whilst these may be essential to continue commercial operations, there may be substantial elements of social policy (implying a discernable community benefit) in the ways

these tasks are organised within the railway. For example, the continued operation of decentralised railway workshops may result in inefficiencies and higher costs but assist in maintaining employment levels and skills in a regional centre.

In effect, the CSO concept can be applied as an adjunct to any economic appraisal of a railway activity. Where economic assessments about the worth of a service or its inefficiencies are made, they can be further examined in terms of their net community benefit. Where the benefits are substantial and best provided by rail then a prima facie case exists for public reimbursement to the railway.

The conflicts for railway managers remains in those circumstances where the desired community benefit has not been identified, and is in fact open to interpretation in each specific instance. The dilemma does not arise from obligations that have been specified by governments but from those historical obligations that are assumed by rail to be a current requirement.

Community Perceptions

In a real political sense, the community sees the railway as an agent or extension of government policy and thus transposes some of its social demands to it. In turn, the railways have developed a tradition of meeting community needs and providing 'services' in the public interest. In this situation the sense of 'obligation' is sometimes more apparent to the railway and the public than it is to government; but, more importantly, that understanding is seen in a context of stability where government directives are subject to change. The interpretation of what is or is not an 'obligation' is made more difficult for the railway when a government's policies are subject to public criticism and parliamentary opposition.

Public confusion stems, to some extent, from the institutional relationship between the railway and the government. Those railways that are, or are perceived to be, a branch of the government's administration tend to operate in a manner that directly accords with Cabinet's requirements. In these systems the CSO concept offers few innovations although it does have the advantage of specifying the level of cross-subsidisation and the relative efficiency of services. Where a railway acts like, or is seen as, an independant corporation with the capacity to exercise some discretion in the implementation of government policies, then the concept offers the mechanism to specify those services that meet a government's policy and which, with proper information, are subject to a variety of negotiations and potential financial arrangements compatible with the commercial role of rail's management.

CHARACTERISTICS OF COMMUNITY SERVICE OBLIGATIONS

The CSO concept provides the means to separate welfare issues from commercial ones in a way that calls for the community benefit to be clearly identified and measured. Once that identification is made it becomes possible to assess and re-evaluate the worth of the service so that specific policy decisions can be determined. Just as importantly the concept of CSOs implies that new or future services can be identified and questions of policy resolved before commencement. Above all, the concept of CSOs provides the means to distinguish between services that constitute a commitment to public needs and the operation of services that may not be in the best economic or social interests of the community.

The characteristics of community service obligations can be described as:

- the existence of a government directive to provide a specific service or function;
- the service or function provides an identifiable community benefit;
- the service or function is operated efficiently but still fails to contribute adequately to corporate profitability; and

- the railway provides the service because rail is the best means available.

The implication of these suggestions is that CSOs are questions of policy and are rightfully the responsibility of governments. The paradox is that where the obligation commits a railway to providing a specific service, then railways must develop the management and planning techniques to cater for it, while advising the government of the effectiveness of rail in meeting the obligation.

The first characteristic, the existence of a government directive, appears self-evident but can be expanded to include historically assumed obligations in which the railways have reasonable grounds to believe that a government would issue such a directive once the details are presented. If no directive exists, or can be assumed to exist, the particular service or function must be regarded in the normal way as an uneconomic service for which the railway is responsible.

The second characteristic indicates that the service or function provided by the railway produces an identifiable community benefit, and that the level of benefit so derived warrants the costs of providing the service. Not all the benefits will be measurable in dollar terms, thus the issue of costs must be interpreted in the context of compatibility with government policy objectives. The third feature common to CSOs is that the service or function cannot be operated on a commercial basis, so is unable to recover its costs or make the profits the market might allow. At present some existing CSOs are not operated as efficiently as might be possible. While a government may have to financially underwrite a service, it will only do so where railway management can achieve a reasonable level of efficiency within the context of the whole rail system s operations.

The final feature can be argued to be a government 'decision' for a railway to continue to operate (or commence) an uneconomic service because it believes rail is the most appropriate or best available means to provide the community benefit(s) involved. The common feature of CSOs, when applied to railways, is that of all the potential options available rail provides the greatest set of community advantages: economic, social or political, as perceived by the community. The complication, of course, is that this 'perception' is rarely based solely on the economics of the service and is subject to a variety of interpretations by government.

In short, the description above provides the means to identify community services from other railway operations and implies the need for government support for the services that fulfil these requirements. Furthermore, part of the process of determining whether or not to continue a service implies an assessment of the suitability of rail in providing the benefit. Those services that qualify as community service obligations will be relatively few in number and subject to specific government requirements.

THE POTENTIAL PRICE OF CSOs

CSO CATEGORIES

The approach adopted provides costing data for categories of service that prima facie can be argued to be CSOs. In all likelihood, any detailed analysis will show that only some of the services or functions identified under each category would warrant specific government funding for continued operation by a railway as a CSO. The sole purpose behind specifying the potential CSO services is to illustrate the maximum extent of the financial drain these 'uneconomic' services may be imposing on the railways so that governments may address the benefits they provide for the community. Of course, an enterprising rail manager might

interpret these as the maximum extent of a possible market: i.e. the sale of services to government!

ARRDO (1980) identified five groupings of rail activity that could be classified as potential CSOs. Subsequent evaluations produced some changes to that list in the light of the characteristics identified earlier. The likely candidates for evaluation as CSOs might now be argued to be:

- suburban passenger services;
- country and intersystem passenger services;
- developmental branch lines;
- concession fares and rates;
- defence; and
- employment levels.

In principle governments are concerned to continue to direct the provision of community services, and to continue to invest in them, for three reasons:

- to ensure the efficient operation of community services and their public accountability;
- to provide a base level of transport to ensure social mobility, prevent overpricing and reduce the opportunities for private monopolies; and
- to limit government expenditures on the provision of private transport facilities (for example, savings in external costs stem from the provision of suburban railways, where governments do not need to invest in additional highways, hospitals, etc.).

There are two types of costs used in this paper. Avoidable costs are those that would not be incurred by the railway if the service were discontinued. This concept explains the costs of providing a particular service and forms the basis of day-to-day decision-making by rail managers. Fully distributed costs include avoidable costs and an allocated share of overheads and administrative costs. This method of costing more accurately indicates the total position of a service as a component of overall expenditure. The costs are generally five-years old as they stem from ARRDO's work for the 1981 Report (ARRDO 1981a), but where relativities are believed to have changed they have been updated.

SUBURBAN PASSENGER SERVICES

Expenditure and Investment

Table 1 Cost recovery of urban passenger services by city: 1978/79 c.f. 1981/82

	1978/79[a]		1981/82[b]	
	Estimated deficit ($m)	Cost recovery (%)	Estimated deficit ($m)	Cost recovery (%)
Sydney	113.7	37	141.8	50
Melbourne	53.5	49	74.6	50
Brisbane	30.7	21	63.3	17
Adelaide	14.7	31	26.8	18
Perth	9.8	20	12.8	18
Total	222.4	38	319.3	42

(a) Data from D. Johnston: A Report on Urban Rail in Australia, 1981. (b) Data from annual reports. (N.B. Sydney figures based on fully distributed costs and revenues. Brisbane's results reflect the initial electrification operating costs.)

These services have not recovered their avoidable costs in living memory and they are major contributors to the railway deficits in New South Wales, Victoria, Queensland and South Australia. Three railways (Westrail, Australian National and V-Line) are not responsible for the metropolitan passenger services although the state railways provide the actual services in Perth and Melbourne. Table 1 demonstrates the order of magnitude of the costs of operating suburban passenger services.

In part, the reasons for the magnitude of these costs are:

- the services are labour intensive (unlike other industries, technological changes to reduce labour requirements have not been introduced);
- the railways provide services for around 18 hours each day, although peak demand is only 5-6 hours;
- government control over fares;
- government control over service levels;
- the high cost structure of railway workshops;
- the continued operation of some old coaching-stock (which incurs high maintenance charges and denigrates the service standard of the rest of the fleet); and
- declining patronage.

There has been considerable investment by governments in all aspects of suburban passenger services, particularly in modern coaching stock in order to meet public demand and counter rising costs. The extent of these investments in suburban passenger services in recent years is shown in Table 2. It is worth noting that each state is proposing substantially greater investments in the next few years.

Table 2 Investment in suburban passenger services 1975-80

	$ Million				
	1975/76	1976/77	1977/78	1978/79	1979/80
State Rail Authority of New South Wales[a]	28.5	48.9	50.1	51.9	41.4
Victorian Railways	n.a.	23.6	25.0	30.1	26.7
Melbourne Underground Rail Loop Authority (MURLA)	40.0	63.7	77.4	87.3	92.0
Queensland Railways	13.2	15.6	25.7	22.9	22.3
Metropolitan Transport Trust - Perth	-	-	-	-	0.7
State Transport Authority - South Australia[b]	n.a.	n.a.	n.a.	7.1	14.1

(a) Formerly the Public Transport Commission of New South Wales. (b) These operations were managed by the Australian National Railways between 1975/76 and 1977/1978.

CSOs

In the five years prior to 1981, the most significant investments were undertaken by the Victorian Government for the development of Melbourne's underground rail loop. The government's justification at the time for constructing the loop were based on community service arguments:

- public demand for a modern and reliable public transport system;
- encouraging travellers to use public transport facilities rather than private transport (to reduce petrol consumption, road congestion, pollution and health costs, i.e. maximise the use of existing infrastructure);
- the government's belief that an investment in urban rail transport facilities was cheaper than providing similar service standards by alternative modes of transport (although this argument may not be accepted today).

Each city, however, has undertaken major developments of its urban rail systems in the last few years, the most significant being:

- Melbourne:
  - underground loop construction;
  - automatic signal control system (Metrol);
  - major track capacity additions on eastern lines;
  - rolling stock replacement program; and
  - the integration of rail with other urban transport modes under the Metropolitan Transit Authority.
- Sydney:
  - construction of the Eastern Suburbs line;
  - rolling stock replacement program; and
  - major track upgrading.
- Brisbane:
  - electrification of the urban system (including new rolling stock); and
  - construction of a cross-river bridge linking the southern lines with the city stations.
- Adelaide:
  - extension of the southern line to Noarlunga; and
  - rolling stock replacement program.
- Perth:
  - rolling stock replacement program; and
  - closure and the subsequent reopening of Fremantle line.

In effect, these developments, and those planned for the immediate future, perpetuate the existing urban travel policies and the existing urban forms of Australia's cities, i.e. a focus on the CBD. The options to change these systems or develop new travel concepts have been rejected by governments at this stage, although Melbourne's 'Met' offers the potential to recognise cross-town travel as a social reality.

The rationale for continuing to fund and invest in suburban passenger services is relatively obvious in terms of the community benefits accruing to Brisbane, Sydney and Melbourne where the costs of providing an alternative transport system to the existing rail network would be prohibitive. A further argument emphasises the social value of urban rail services, in that there are a significant number of people throughout the community who cannot provide themselves with an adequate degree of mobility relative to the rest of the community. This disadvantaged group usually consist of the young, the elderly, the poor, the handicapped and the minimal and welfare income groups. Rail also has a value to some commuters as a back-up service to substitute for their normal mode.

Options for Improved Performance

Within the existing urban rail structures, there is considerable scope to improve financial performance, but to pursue financial objectives in isolation is likely to lead to conflicts with the broader social and economic objectives of government. Nevertheless, there are four obvious areas in which financial performance can be improved.

(a) Fare increases

ARRDO's experience suggests that the overall demand elasticity with respect to fare increases is about -0.2 (i.e. a 10% increase in fares will reduce patronage by about 2%). Peak period travel is known to be less elastic than off-peak travel because of the high proportion of 'captive' journeys in the peak. Overseas estimates of the variation range generally between -0.1 for peak travel and -0.4 for off-peak, while in Australia the range is between -0.1 (peak) and -0.3 (off-peak). Fare increases therefore result in a net loss of passengers but a net gain in revenue. Selective fare increases applied to the least elastic market segments will result in the highest revenue gain and the lowest net loss in passengers.

Fare reductions may lead to net revenue losses as fare levels are not always the primary factor in attracting car travellers to use public transport. Service frequency, journey time and comfort have been shown by some market surveys to be more important than fares.

(b) Service levels

Increased service levels by way of service frequency, journey time and comfort will have positive effects on patronage levels but at a cost. For example, the introduction of electric services with high comfort rolling stock in Brisbane, and a reduction in journey time of up to 20% appear to have resulted in peak period patronage increases of the order of 20% (D. Johnston 1981). Off-peak service frequency improvements in Brisbane have been observed to have an elasticity of approximately 0.65. Promotion of a 'clock-face' off-peak timetable has been estimated to have resulted in a 5% increase in off-peak patronage in Brisbane.

(c) Cost containment

Operating costs can be reduced by cost containment in major cost centres, workshops, track and staffing. While these areas raise problems generic to all railway operations, costs can be reduced by reducing the level of output, for example:

- line closures;
- reduced station staffing;
- reduced service frequency; or
- elimination of weekend or evening services.

Options of this kind, must be carefully evaluated. Weekend and evening services only account for 5-10% of total avoidable costs; it is the peak operation that establishes fleet sizes and crew costs. Reductions in peak frequencies are only tenable in relation to the overall objectives of urban transport and urban form where some other alternative is available for users.

(d) Labour reductions

Finally, analyses of the labour component of railway operations have consistently concluded that they are employing too many staff (by as much as 20-33% above required levels) and that labour productivity is low. This problem is not specific to urban operations but labour is the largest single cost component. Staff reductions in urban rail systems would improve financial performance and would reduce the need to adopt alternative strategies such as cutting services. Productivity improvements, such as automatic ticket machines, contract cleaners etc. could lead to significant improvements to urban rail's overall cost-recovery.

COUNTRY AND INTERSYSTEM PASSENGER SERVICES

Demand

Each of the railways has experienced a considerable decline in country passenger traffic since World War II, but that pattern has reversed in the last couple of years in Queensland and New South Wales. Preliminary figures for Victoria for 1983 also suggest a reversal. In the east coast states, it is anticipated that there will be an increase in country passenger traffic partly due to the rising costs of travel by other modes and partly as a result of planned improvements to services. Passenger rail services in South Australia, however, will continue to decline and be replaced by road-coaches which can more effecively meet the needs of a sparsely distributed rural population. This is demonstrated further in Table 3.

Table 3 Estimated country passenger journeys 1975-82 and forecast journeys 1985 - (000s)

	1975/76	1977/78	1979/80	1981/82	1984/85
AN	350	350	253	200	180
QR	1 750	1 625	1 476	1 645	1 900
SRA	n.a.	2 905	3 261	4 074	4 500
VicRail	4 131	3 584	3 207	3 043	4 000
Westrail	318	322	359	343	400
Total	-	8 786	8 556	9 305	10 980

Note: Figures exclude intersystem patronage and Sydney inter-urban traffic but include road-coach services. Figures update ARRDO (1981) 'Review of Country Passenger Services', Table 3.7.

Table 4 lists the current interstate trains, together with their estimated annual patronage. This list creates some difficulties as most interstate trains carry rather more than the end-to-end trip-makers and the interstate ticket holders; Table 4 separates total passengers into 'through' and 'local' to highlight this phenomenon. All trains except for the Intercapital Daylight convey sleeping accommodation.

Table 4 Interstate services

	From	To	Annual patronage ('000) 1979/80 Through	1979/80 Local	1981/82 Through	1981/82 Local
Southern Aurora	Melbourne	Sydney	97	1	75	1
Spirit of Progress	Melbourne	Sydney	165	85	175	80
Intercapital Daylight	Melbourne	Sydney	110	10	118	10
Brisbane Limited	Brisbane	Sydney	150	35	n.a.	n.a.
Overland	Melbourne	Adelaide	175	30	186	40
Indian Pacific	Sydney	Perth)	70	30(a)	67	35(b)
Trans Australia	Port Pirie	Perth)				
Ghan	Port Pirie	Alice Springs	12	-	27	-

(a) 10 000 WA Perth-Kalgoorlie, 10 000 NSW Sydney-Broken Hill, 10 000 Broken Hill-Peterborough. (b) 15 000 WA, 15 000 NSW, 5000 SA.

Source: ARRDO (1981) 'A Review of Country Passenger Services', Table 9.1 and current estimates

In the eastern states 60-70% of country passenger traffic is generated within 150kms of the capital city, and with a few exceptions, such as the Cairns-Kuranda tourist route, the remaining patronage comes from long-distance intercity trains. The remaining rail feeder services in outback areas are now historical anachronisms carrying negligible number of passengers.

As yet, there has been little analysis of the composition of land-based country passengers in Australia. However, the limited studies conducted by ARRDO (1981) in Western Australia, by Beacon Research (1980) in the State Rail Authority, by VicRail and by Johnston and Catchpole (1981) produce a consistent description of the market; viz:

- more than 60% of all country passengers are female;
- approximately 66% of all country passengers are children, students or pensioners entitled to travel by concession and that these people coupled to other concession travellers account for 75-80% of all patronage; and
- 70-80% of adult passengers have incomes below the minimum adult award wage and 40% of adult passengers survive solely on pensions, welfare incomes or less.

This pattern continues across a range of indicators, suggesting that a very large segment of rail passengers are 'captive' to public transport and rely on it for low cost mobility.

Further, the survey results demonstrated that only 25% of rail passengers and 34% of bus passengers travelled for business purposes (both commercial and private) while all other respondents claimed they were travelling for social or recreational purposes. A tentative conclusion might be that the key determinant

for travel by the economically disadvantaged segment of the community is the availability of low fares with reasonable standards of comfort that enables them to take holidays and visit families. Country rail services currently perform this role. but where cheaper services are available they will be supported: the dramatic impact of road-coaches on interstate services is evidence of this.

The surveys' results for journey purpose also clarify the causes of peaking of demand which effects all passenger services. Clearly, if three-quarters of total patronage is travelling to visit families or for recreation, their travel patterns will be concentrated around school holidays, Christmas, Easter and long weekends. Perhaps the most extreme example of peaking of demand occurs on the Adelaide-Victor Habour service which has recorded as few as 6 passengers per trip (August 1979) and as many as 906 per trip (January 1980). The variations in demand from day-to-day and month-to-month raise significant problems for the railways in providing coaching-stock, staff and other resources for spasmodic use.

Financial Performance

Country passenger services, like suburban services, are a major factor contributing to the railways' deficit, and the extent of their costs are illustrated in Table 5.

Table 5 Estimated avoidable cost of country passenger rail services 1979/80

	Direct passenger earnings $m	Avoidable cost $m	Deficit $m	% recovery
AN	.9	3.4	2.5	27
QR[(a)]	6.9	17.5	10.6	39
SRA[(b)]	13.8	43.1	29.3	32
VicRail	12.2	35.0	22.8	35
Westrail - rail only	1.5	2.7	1.2	55
Total	35.3	101.7	66.4	35

(a) Excludes revenues and costs for special tourist services.
(b) Excludes results for interurban services.

Note: Data excludes intersystem, further details see ARRDO (1981).

While some improvements in cost recovery for country passenger services are possible in the near future, it is unlikely that losses on operations will decline significantly, if at all. The implications for railway managements and State Treasuries is obvious and ways must be found to rationalise expenditure and improve efficiency.

Rail systems data suggests that some mainline intercity passenger services, and even the sit-up interstate services, can come tantalizingly close to recovering their direct avoidable costs, but most do not. Inter-urban and short-haul services perform rather poorly, generally recovering around 30%. The few feeder services that continue and the remaining mixed-goods services (in Queensland) suggest cost-recovery levels below 10%.

Increasing rail fares without substantial improvements to travel time and comfort offers little hope of significant improvements in country passenger revenue. On average only one-quarter of rail patrons pay the full adult fare with the rest travelling on some form of concession half or free fare. Even while patronage of a number of services may be increasing, the share of total patronage by concession fare travellers is increasing at a higher rate, thereby reducing the average fare paid. Furthermore, many of the full-fare passengers possess the means to choose another mode of transport and have demonstrated a greater sensitivity to fare increases.

Costs

The costs of providing country passenger services remain the central issue. The critical cost components are:

- terminal costs, typically averaging 20-25% of avoidable costs;
- crews and on-train staffing costs, around 17% of avoidable costs, except on 'sleepers' where they average around 25%;
- maintenance charges, around 20%; and
- fuel costs, now exceeding 10% of avoidable costs.

On a national basis, terminal costs average $3.50 per passenger journey, or about 1.8¢ per passenger-kilometre. The magnitude of terminal costs stems largely from the large staff numbers employed at stations and shunting yards and, in part from the obsolete design of some termini and the need to break up train consists. High on-train labour charges are particularly apparent on 'sleeping' trains and the intersystem services. Passenger services also incur higher crew costs than other rail services as a result of peculiar shift and mileage allowances.

Locomotive maintenance costs vary considerably from state to state but typically average $1 per kilometre while carriage maintenance charges typically average 36¢ per kilometre: a reflection of the high workshop and maintenance charges in each railway. Fuel costs rose from 5% to 10% of avoidable costs between 1975-80 and have increased still further in some systems with the advent of new state and federal fuel levies.

Intersystem and intrastate 'sleeping' trains tend to haul a number of carriages other than those carrying passengers, e.g. power vans, brake vans, baggage, staff and buffet cars, motorail wagons etc which substantially raise the vehicle/kilometre cost above the average 'sitting' passenger train, in some instances by more than 100%.

Until very recently these cost factors and the decline in patronage had convinced most state governments that investment in country passenger services was unwise. Recent trends in patronage and the impact of rising transport costs has led to a reassessment of this opinion in Victoria, New South Wales and, to a lesser extent, in Queensland, where major re-equipment programs are now under way. Table 6 indicates the scope of the investment problem since 1975.

Future Directions

Country passenger rail services are currently estimated to cost around 6.5¢ per passenger-kilometre for average trips assuming a 60% load factor. These costs escalate dramatically with services that have very low loading factors, and can be reduced to around 4¢ per passenger-kilometre with very high loading factors. The costs of competing modes are about 4¢ per passenger-kilometre for road-coaches and 6-7¢ per passenger-kilometre for wide-bodied aircraft. In short, the cost structures of rail's main competitors are significantly lower for low patronage routes (road-coaches) and are comparable (air) for densely trafficked routes.

Table 6 Investment in country rail services[a] ($ million)

	1975/76	1977/78	1979/80	1981/82
VicRail	n.a.	0.4	1.7	14.2
SRA	3.7	0.1	0.2	n.a.
AN	0.6	-	-	-
QR	-	-	-	2.0
Westrail	-	-	0.5	-

(a) Refurbishment and some construction is incurred under operating expenses in most railways. Advantages accruing from joint investments are not included.

Present road-coaches are generally capable of providing similar standards of service to country passenger trains, and in some cases can provide faster transit times and more comfortable seating than existing rail services. Consequently, where the argument can be made that the government has incurred a CSO to provide a public transport service to a rural centre, the service that will be funded is likely to be by road-coach unless it can be established that a rail service is more viable or accrues a specific range of community benefits that cannot be provided by road-coaches. As well, in financial terms, even where road-coaches cannot recover costs, their absolute losses are significantly less than for similar rail services.

The arguments presented by country communities for the preservation or development of passenger rail services are inevitably based on the economic and social value they provide, irrespective of the 'emotionalism' actually involved.

There are, however, three issues that dominate their concern:

- the provision of regular services;
- the role the services play in encouraging local development; and
- the role the services play in maintaining employment.

ARRDO has reviewed many of the submissions made by country authorities to the railways. Inevitably, these perceive a need for regular (daily or more frequent) services to enable residents to travel to other rural centres and to capital cities. While these submissions point to the need for a transport service to facilitate business travel they indicate that rail services best meet the preferred needs of children, women, the infirmed and the elderly. Where they already exist, regular rail passenger services are argued to be an essential factor (among a whole range of factors) encouraging development and settlement in the local region in the short and long term. This is particularly the case where any regional body believes it has the opportunity to build a tourist industry. Conversely, the submissions indicate that any reduction in rail services constitutes a negative factor for local development. Similarly, the maintenance of country passenger services is perceived to be linked to local employment levels; particularly, country centres located at termini can readily indicate the effect of discontinuing a service on local employment prospects.

It is the assessment of these arguments that will determine what form of transport arrangements a government might fund. It is likely that there will be a reappraisal of rail's passenger role and, consequently, a rationalisation of services

to reduce deficits and improve the standards of those rail services that are justified. Rural communities will still receive public transport services as obligations that governments will continue to recognise, but in many cases the current mode may not be appropriate.

Cost containment, particularly in workshops and for catering services, coupled with new pricing strategies, should ensure a brighter financial future for the remaining services. Interstate trains, and particularly the sleeping services, continue to impose massive cost penalties on their operators. Continued government support is hard to justify on economic or social grounds, especially given the relative costs and the high levels of public support for the road-coach and air industries. Current patronage demand is sufficient only to continue operating one daily Sydney/Brisbane service, one daily and one sleeping Sydney/Melbourne service, one daily Melbourne/Adelaide service and the Ghan. The remaining services fail assessment as CSOs on any grounds other than as political flag-carriers; and, while this might be legitimate, it is unlikely that a government would care to publicise this.

DEVELOPMENTAL BRANCH LINES

The Australian state-owned railways operate an extensive network of branch and developmental lines which ARRDO, in 1980, grouped as those carrying less than 500 000 gross tonnes per kilometre per annum. Railways of Australia (1980) indicated the number of lines as shown in Table 7 (reproduced in Map 1).

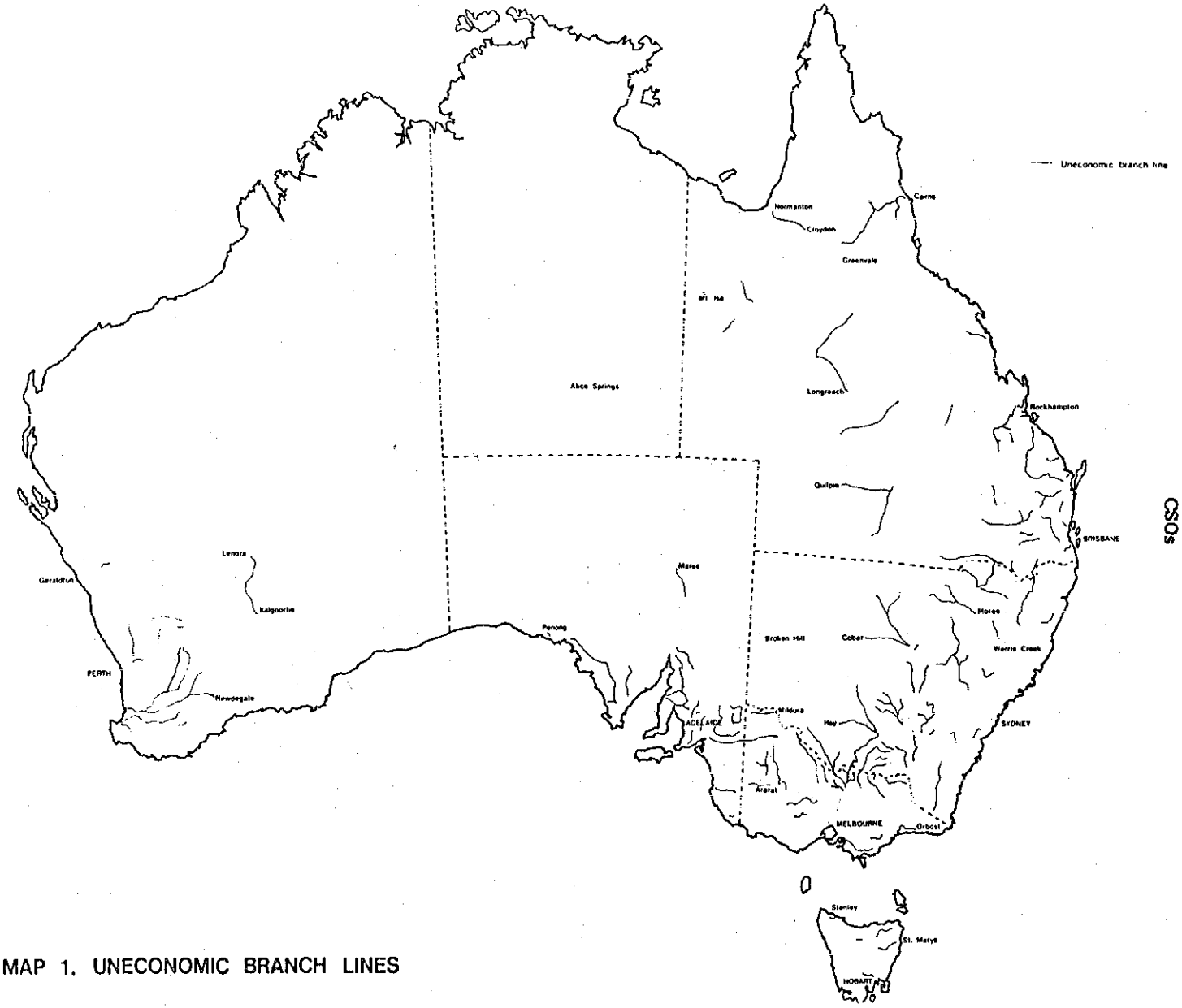
Table 7 Developmental branch lines, 1980

Railway	Number
AN	31
QR	39
SRA	40
VicRail	33
Westrail	21
Total	164

Since 1980, however, there have been a number of branch line closures, particularly in Western Australia and Victoria, and the relegation of some lines to seasonal or demand operation, in South Australia, Victoria and New South Wales.

The full cost impact of continuing to operate small volume branch lines is largely unknown for a number of reasons:

- while most railways have the informational resources to determine a line's cost, the means are not available to allocate revenues and determine net earnings for individual lines;
- directions by governments to keep these lines open, and provide a range of passenger and freight services, has reduced the necessity for railways to closely monitor the economics of branch lines;
- the maintenance of branch lines is often costly, due to the need to provide a minimum standard of track far from routine facilities; and
- some of the lines have viable seasonal operations, usually for grain, while others service passenger and LCL needs only or, in other words, the costs, operations and financial returns tends to vary widely making generalisations about branch line performance inaccurate.



MAP 1. UNECONOMIC BRANCH LINES

There is little hard evidence to demonstrate the costs of branch line operation. In 1980, Westrail estimated the deficit for operating uneconomic lines at $600 000 p.a. on a short-term avoidable basis but have since conducted a major review of their branch line operations. Similarly, AN estimated their avoidable loss at $1 000 000 p.a. and ARRDO believed VicRail's cost was around $2 million. The data simply is not available to establish an order-of-magnitude estimate for either SRA or QR; and, in any case, QR regards its branch line services as an integral function of the railways as part of government administration.

SRA, V/Line and AN recognise that some branch lines are not economic and do not warrant further maintenance expenditure: they will close in time. In general, rail managers prefer to treat these lines as part of their routine management, and in some respects, this is already the case. Queensland Railways is the only system to have made any significant investment in branch lines since 1975, and that amounts to an average of only $1 million each year.

For many of these lines there is greater value, from the railways' perspective, in scrapping them and disposing of their assets. The track, buildings and land represent an opportunity cost that the railways could be permitted to capitalise upon which, combined with the avoidable costs of operation, represent a small but significant reduction of deficits. There are, of course, political difficulties in withdrawing services, but the high cost of operating these lines, particularly those that carry only passengers and LCL traffics, may no longer be regarded by governments as a community service benefit where other modes of transport can provide the same services more efficiently and with less impact on their treasuries resources.

The main arguments that would need to be evaluated if a branch line is to be assessed as a CSO, are likely to be:

- reduced costs for transport to isolated rural communities (although some other form of transport subsidy might be more suitable);
- employment in country and regional centres, which if displaced could be hard to relocate; and
- the termination of a branch line could lead to an increase in the use of heavy road vehicles that would further increase the costs of maintaining local roads, or generate road hazards say during grain harvesting.

CONCESSION FARES AND RATES

Each of the government railways is required to offer a variety of concession rates and fares to nominated sections of the community. Historically, governments have directed the provision of concession rates and fares to benefit disadvantaged groups within the community or to assist the promotion and development of specific regions or industries in accordance with their own particular policies. In more recent years, government has sought to authorise concessions on a more or less comparable basis with every other state. As concessions are provided at the explicit direction of governments, the cost to the railways in terms of lost revenue for the carriage of those goods or people can reasonably be regarded as a CSO. In fact, the argument can be extended to cover the costs railways incur in providing additional administrative and clerical services to provide and account for concession travel and freight ratings.

Concession Fares (Passenger)

Most railways regard concession fares to passengers as part of normal marketing, but concessions for pensioners, students over 16 years of age, the unemployed etc, are approved by governments as an integral part of the

fare structure. This approach to concession fares means that separate records for concession sales are not kept (except by AN). Therefore, there is no method by which the loss of revenue to the railways for carrying these passengers can be accurately determined.

Survey results suggest that around 40% of adult passengers travel by free pass or concession fare on country and interstate services: urban services, of course, carry a much lower proportion of concession passengers but still suspected to be around 20% of adult patronage.

In some circumstances the offer of concession fares generates an income that would otherwise not be earned: although concession patronage is such a significant proportion of total patronage that the viability of many services is determined by them. Furthermore, the majority of concession passengers travel for family or recreational reasons and thus compound the peak loading problems of the railways, particularly on country and interstate services.

There are marginal differences in the types of passenger concessions for rail travel offered by each state but there are significant differences in the methods of reimbursement used by the governments for the railways. Three states serve to illustrate this point.

- Westrail: the Western Australian Government provides a lump-sum grant as reimbursement for concession fares, currently around $1.25 million. Westrail allocates these funds as revenue proportionately to country rail, road and intersystem passenger services.

- State Rail Authority: the New South Wales Government provides a specific funding allocation to SRA as reimbursement for each type of concession offered. These allocations are based on estimates made by SRA of rail usage by concession fare recipients and are subject to continual review. The allocations for 1981/82 were $39.9 million for all rail passenger services.

- Queensland Railways: the Queensland Government expects the state railway to carry concession passengers within its own resources and no specific funds are provided as compensation or reimbursement. In specific instances, such as the two annual free passes issued to pensioners, the State Treasury provides a full refund to the railways for the face value of the tickets sold.

It is a matter for further research to determine accurately the costs to the railways of government directed concession fares and a basis for fully reimbursing the railways for revenue foregone.

Concession Rates (Freight)

Most of the state governments have policies and practices designed to reduce transport costs for specific industries or to promote regional development by controlled freight rates. Primary industries are the main beneficiaries of this form of assistance, particularly for wheat, livestock, wool and fertilisers. To illustrate, VicRail in 1980 was subject to control of rates for wheat haulage that resulted in only an 80% recovery of avoidable costs which, as VicRail's major bulk traffic, might otherwise have been expected to generate sufficient revenue to contribute significantly to joint costs. (It is acknowledged that this policy has since changed.)

The New South Wales Government has embarked on a policy to identify the subsidies paid for transport and to reimburse SRA accordingly. The 1980/81 budget allocation for rate concessions to SRA were as shown in Table 8.

Table 8 Reimbursement of freight rate concessions to SRA, 1980/81

Commodity	1980/81 Subsidy
Ten per cent freight rate reduction on certain primary products	$ 1 000 000
Freight rebates on wheat and wheaten products	$ 13 500 000
Freight rebates on wool	$ 620 000
Total	$ 15 120 000

Data on the total costs of freight rate concessions is not available, generally because railways do not make the precise amount known. It would seem that the approach by governments to assist regions or industries by subsidising the transport operator is not very effective, and may even be counter-productive for the overall public interest. The present approach ensures that rail carries the goods of particular industries irrespective of its suitability or efficiency. A greater benefit to the community may accrue from a system that assists producers directly and allows them the choice of mode. At this stage, however, rail can identify the costs of most concessions either by disaggregating direct reimbursements or by making assumptions about the effects on demand. In any event 'concessions' are CSOs because they are specifically at the behest of governments.

DEFENCE

Defence considerations have long been part of the rationale for constructing, operating and maintaining some of Australia's railways. In recent times, defence considerations have been one aspect of the decisions to construct the Tarcoola-Alice Springs (and Darwin) railway, standardise rolling-stock and track clearances. Discussions about these issues, and the costs they may or may not generate for railways, have been dealt with in other forums but little recognition is given to the continuing day-to-day commitment of the railways to the national defence effort.

There are a number of rail sidings and associated facilities within Defence establishments all over Australia. Most are long established as a result of previous military activity, although many have faded into disuse, and were built by the railways, funded through the Defence Department to handle the requirements of the military during an emergency.

Plans are now in hand within the Defence Department, to place greater emphasis on rail as the normal mode for large defence moves, with current plans calling for a major rebuilding and upgrading of supply depots, where rail is an integral part of the transport facilities. In 1981 ARRDO determined that there were nearly 30 separate rail sidings, spurs or supply terminals involved in defence planning and proposals for upgrading, maintaining or building of new facilities. Overall, it demonstrates an increasing role for rail in the future.

CSOs

All the rail sidings and facilities on defence establishments are owned by the Department of Defence. They are on Defence land and are registered as assets of the appropriate Service. Maintenance charges are paid by the Department of Defence to the relevant railway systems. These charges are calculated by one of two methods:

- fixed annual maintenance, calculated as 2% of actual construction costs; or
- actual cost basis, calculated on a labour and material cost (this equates to an avoidable cost basis).

Unequivocably, neither of the present funding arrangements fully reimburse the railways for the expenses incurred in maintaining and providing these facilities. Even though the current costs are small, they have the potential to escalate rapidly and significantly increase the burden on railway expenditures. As defence is solely a Commonwealth responsibility, the railways ought to be able to expect reimbursement (based on fully distributed costs) for each and every activity they perform for the defence services that cannot be retrieved under normal commercial rates

EMPLOYMENT

Where a government imposes restraints on employment levels within a railway that are over and above the normal restrictions placed on commercial organisations and which are designed to satisfy that government's social objectives, there appears to be sufficient argument prima facie that a CSO exists. (As GMH and BHP have experienced, it is difficult to determine just what is a government restriction on employment.)

Table 9 gives some indication of the high number of employees in Australia's railways. SRA, QR and now V/Line are bound by government policies that not only prevent redundancies but guarantee workforce sizes. AN and Westrail are similarly bound to policies of non-redundancy but have managed to reduce their workforce size since 1975.

Table 9 Estimated number of people employed full time in Australian railways

	30/6/76	30/6/78	30/6/80	30/6/82
Westrail	9 999	10 065	9 727	8 937
VicRail	24 903	23 408	22 600	20 893
AN[(a)]	n.a.	11 650	10 516	9 978
STA (rail only)	n.a.	1 391	1 240	1 200
PTC[(b)]/SRA	37 547	39 903	39 700	41 607
QR	24 003	24 583	24 980	25 243
Total	-	111 000	108 763	107 858

AN[(a)] figures exclude 'made available' staff to STA.

Source: Annual Reports, PTC[(b)] estimated from working expenses by R. Travers Morgan (1981), 'Rail Financial Performance 1968/69 - 1979/80' Sydney, Table A1.

Recent studies have shown that most of Australia's railways are achieving low productivity levels per employee, in the following areas:

- railway workshops;
- on-train crews (passenger services);
- stations, parcels offices, terminals and shunting-yards; and
- general goods yards, LCL or 'freight centres'.

In some cases, there are options available to improve employee output, for example, railway workshops tendering for contracts with private industry. In general, many of the costs incurred by railways could be substantially reduced by introducing labour-saving technologies. In a 'free market', WR, AN, V/Line and SRA would probably want to shed at least 10% of their labour immediately, which suggests an order-of-magnitude cost of these employment restraints of around $110 million (1981/82). Where a government believes that the political and social consequences of such a policy are unacceptable then the railways ought to be compensated for the net cost that the surplus labour incurs.

SUMMARY

Table 10 summarises the known costs of providing the types of service which, if analysed in detail, might warrant funding as CSOs. Costing data for all systems for each category was not always available because of the data collection resources of the individual railways. The summary table, however, relies heavily on estimates or preliminary figures and must be treated only as indicative of the financial problem.

Table 10 indicates an avoidable loss from Australia's passenger services of $296.5 million for 1979/80. Suburban and country passenger operations, while subject to assessment and improvements in efficiency, are the most obvious candidates for funding as community service obligations. The data available for indicating the financial status of uneconomic branch lines is incomplete and further studies will be needed to draw any realistic conclusions. The little information that is available suggests that many of these lines carry only small tonnages of LCL and seasonal produce and, in many cases, the service could be better provided by road. However, each line serves a unique environment and must be evaluated separately.

Similarly, the railways do not possess the information resources to calculate the full costs of providing concession rates and fares. Actual costs incurred by the railways for meeting government employment objectives have been indicated, but without a detailed analysis of this question within each railway the figures remain merely illustrative. The same argument applies to the costs incurred by the railways in meeting the needs of the defence forces.

The total national deficit (working expenses and capital) incurred by passenger operations in 1979/80 accounted for 40% of total rail deficits and the other candidate categories may total a further 20% of total deficits. In these circumstances it is of paramount importance for the railways and their sponsoring governments to clarify and specify those services and functions that are to be continued as community services. Specification of these obligations on railways would enable governments to separately fund them, and monitor their performance, while releasing railway managements from the tasks of administering government policies and allowing them to treat all their operations in a competitive and commercial manner.

CSOs

Table 10 Avoidable costs of some candidate categories of CSOs: 1979/80[a]

$ million

State railway	Suburban passenger (rail)	Non-urban passenger (rail)[b]	Uneconomic branch lines	Concession rates/ fares	Defence	Employment	Total state railway deficit[c]
Westrail/MTT Working deficit	10.4	1.2	0.7	7.4	n.a.	11.0	38.4
QR Working deficit	41.5	10.6	Nil	n.a.	n.a.	Nil	131.0
VicRail Working deficit	57.0	22.8	2.0	n.a.	n.a.	14.7	189.0
SRA Working deficit	119.0	29.3	n.a.	n.a	n.a.	50.8	328.0
AN/STA (rail only) Working deficit	20.2	2.5	1.1	1.5	n.a.	12.3	85.6
Total	230.1	66.4	n.a.	n.a.	n.a.	88.8	772.0

(a) These costs are illustrative estimates only, based on the direct costs of operation.
(b) Excludes inter-urban services and intersystem services for which no estimates were available.
(c) Data developed from ARRDO (1981a), Report on Rail, Table 2.

Sources: Annual Reports.
Results from ARRDO Contribution Analyses Studies; ARRDO (1981a), Report on Rail, and ARRDO and R. Travers Morgan (1981), 'Review of Country Passenger Services', Melbourne.

REFERENCES

ARRDO (1980), Public Interest Considerations in Australian Railways Identification Measurement, and Compensation, ARRDO Report No. 80/16, Australian Railway Research and Development Organisation. Melbourne.

ARRDO and R. Travers Morgan (1981), A Review of Country Passenger Services, ARRDO Report No. 81/62, Australian Railway Research and Development Organisation, Melbourne.

ARRDO (1981a), '1981 Report on Rail', Australian Railway Research and Development Organisation, Melbourne.

ARRDO (1983), 'National Rail Policy Seminar, Reports of Proceedings', ARRDO Report No. 83/25, Australian Railway Research and Development Organisation, Melbourne.

ARRDO (1983a), 'A Theoretical Framework for Identifying Urban Rail Issues and Areas for Further Research', ARRDO Report No. 82/41, Australian Railway Research and Development Organisation. Melbourne.

Beacon Research (1980), 'Country Rail Services Survey', SRA.

ECMT (1976). Committee of Deputies Railway Group, The Influence of Public Service Obligations on the Financial Position of the Railways and on Government/Railway Relationships - Report to the European Conference of Ministers of Transport, Paris, ECMT, February 1976.

EEC (1969), EEC Regulation No. 1191/69: Journal Official, No. L156, EEC, 1969. Published as part of Committee of Deputies Railway Group. The Influence of Public Service Obligations on the Financial Position of the Railways and on Government/Railway Relationships - Report to the European Conference of Ministers of Transport, Paris, ECMT, February 1976.

Johnston, D. (1981), 'A Report on Urban Rail in Australia, Denis Johnston and Associates, Brisbane.

Johnston D., Catchpole, A.D. (1981), 'An Analysis of the Long Distance Bus Industry in Queensland' from ATRF, 1981.

Railways of Australia (1980) 'Classification of Railways, Functional Classification and Traffic Task Classifications', Melbourne.

R. Travers Morgan Pty. Ltd. (1979), 'Analysis of Freight Costs and Revenue', Sydney.

R. Travers Morgan Pty. (1980), 'Rail Financial Performance 1968/69-1979/80', Sydney.