

Safety in Regional Coach Operation: Understanding Responsibilities

John Usher

Introduction

This paper proposes that, while operational safety in regional coach operations is already at a high standard, improvement is possible, and must be the result of a wide ranging co-operative approach between Government, regulators and operators. This is particularly important given Government's efforts to contract out of liability, and through contract conditions and accreditation requirements, seeking to place all responsibility for safe operations onto operators and contractors.

My concern here is quite specific - with the operation of regional coach services - that is coaches that operate to a regular timetable in the regional areas of Australia linking country towns and village with major cities. These services, some provided commercially but most with varying levels of government support for the Community Service Obligation (CSO) function, provide essential mobility and access links in many non-urban areas of Tasmania, for example. The operating experience upon which this paper is based is specifically Tasmanian, but in many ways this represents Australian conditions in miniature.

Tasmanian Operating Conditions

The main Tasmanian highway is mostly of two lanes, with lengths of three lanes to facilitate passing. Most other highways and main roads are two lanes, relatively narrow, and there are many hilly and twisty sections around the island. Road maintenance, while generally adequate, is not extravagant, and conditions are exacerbated by the relative isolation of large lengths of highway, and variable weather conditions. In short, the provision of regular coach transport in Tasmania – particularly to the West Coast - is an operational challenge.

Perhaps surprisingly, despite the small size of the island, the Tasmanian population, of just under 500,000 people, is the most decentralised of any Australian State, with a greater proportion of its people living away from the main cities in many small towns and villages. There are no scheduled passenger rail services and all regional public transport is provided by coach services. There are varying CSO support arrangements, including contract payments, and concession and student fare “top-ups”.

There is no published regional transport policy as such, so that at this stage there is no consistent approach to the provision and financing of regional services, beyond what is necessary to ensure children are able to attend school. For a very few services, there is a commitment to maintaining a minimum level of service through contract arrangements.

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An Area of Opportunity

However, recently enacted legislation may well provide the basis for the development of an effective, efficient and safe regional coach service network, based on a rationalised network of contracted school and “core” regular public transport (RPT) services, accreditation of operators, and contracted operation.

While it is notable that Governments seek to set themselves at arms length from responsibility through contract mechanisms (see Annex 1) and accreditation requirements, in the final analysis this is not possible representing as they do the full interests of the community. It is therefore in the interest of Government, when formulating accreditation requirements, contract conditions and contract payments, that the operational and financial ramifications are understood and appreciated.

It is hoped that this paper will add to the understanding of the factors and responsibilities underlying the safe provision of regional public transport services.

The Statistical Position

Fatal crashes and fatalities involving buses and coaches by State/Territory, 1991 to 1998 (source Australian Road Safety Bureau (2001) e-mail enquiry)

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Australia</i>
Fatal crashes									
<i>1991</i>	6	6	12	3	1	1	0	1	30
<i>1992</i>	11	4	4	3	2	3	0	1	28
<i>1993</i>	14	5	7	2	5	1	1	1	36
<i>1994</i>	8	7	7	0	3	1	1	1	28
<i>1995</i>	9	3	6	1	2	1	0	0	22
<i>1996</i>	15	4	6	0	3	1	0	2	31
<i>1997</i>	13	1	2	0	5	1	1	1	24
<i>1998</i>	12	2	7	0	0	1	1	0	23
<i>1999</i>	10	2	12	2	1	1	0	1	29
	98	34	63	11	22	11	4	8	251
	39.04%	13.55%	25.10%	4.38%	8.76%	4.38%	1.59%	3.19%	100.00%

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Fatal crashes and fatalities involving buses and coaches by State/Territory, 1991 to 1998 (source Australian Road Safety Bureau (2001) e-mail enquiry)

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas</i>	<i>NT</i>	<i>ACT</i>	<i>Australia</i>
Fatalities									
<i>1991</i>	7	6	13	3	1	1	0	1	32
<i>1992</i>	20	4	4	3	2	5	0	1	39
<i>1993</i>	15	15	8	2	6	1	1	1	49
<i>1994</i>	8	7	19	0	3	1	1	1	40
<i>1995</i>	9	3	6	2	2	1	0	0	23
<i>1996</i>	18	5	9	0	3	1	0	2	38
<i>1997</i>	14	1	3	0	5	2	1	1	27
<i>1998</i>	15	2	10	0	0	1	1	0	29
<i>1999</i>	13	2	12	2	1	1	0	1	32
	119	45	84	12	23	14	4	8	309
	38.51%	14.56%	27.18%	3.88%	7.44%	4.53%	1.29%	2.59%	100.00%
Fatality/crash	1.21	1.32	1.33	1.09	1.05	1.27	1.00	1.00	1.23

The above are the most recent statistics available, and cover all bus and coach related fatalities. These include deaths of school children leaving or joining a bus (9 in 1994), and deaths from operations not involving regular bus services, for example hire and drive operations, and tour coach operations.

Fatalities and Serious Injuries per Passenger Kilometres – 1995 (source Federal Office of Road Safety 1997)

<i>Vehicle Type</i>	<i>Fatalities</i>	<i>Serious Injuries</i>	<i>Fatalities per 100m km.</i>	<i>Serious Injury per 100m km.</i>	<i>Passenger Kilometres (100m km)</i>
All passenger vehicle (car) crashes	1709	19812	.63	7.27	2725.96*
All crashes involving a bus/coach	21	310	.07	1.05	295.8**

* Average occupancy 1.8 passengers per kilometre

**Average occupancy 20 passengers per kilometre

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When analysed in terms of passenger kilometres travelled, based on average load factors, it is evident that the risk of fatality is nine times worse travelling by car than by bus, and the risk of serious injury is 6.9 times worse.

**Fatal crashes involving buses by speed limit at site and crash type, Australia 1998
(source Federal Office of Road Safety 1999)**

Type of Fatal Bus Crash	Speed Limit at Crash Site (kph)			
	Up to 60	65 – 95	100+	All fatal crashes
Pedestrian Crashes	5	1	0	7
Other Single Vehicle Crashes	2	0	1	3
Multiple vehicle crashes	5	3	5	13
All bus crashes	12	4	6	23

From the above it may be assumed that about half of fatal crashes involving buses occur in metropolitan areas.

Statistically, then, the problem in terms of number and risk of deaths and/or serious injuries on regional coach services is low. This does not however justify neglecting consideration of the means to improve the situation.

Attitude of Coach Operators

Coach operators have an innate “zero tolerance” of any accidents, but in particular of serious accidents, accidents which might be defied as those which expose passengers to the possibility or occurrence of serious injury, and/or which cause significant damage to the coach.

There are quite practical reasons why this is so, including the impact of accident publicity on an operator’s reputation and the economic cost of recovery and repair after an accident. Additionally there are the regulatory (through accreditation standards) and/or contractual liabilities of the operator, not to mention common law issues.

It may be said that the understanding of these issues could vary between operators, and it is through the accreditation and contracting processes that this understanding will be improved.

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Factors Involved

The factors, which impacts on both active and passive operational safety are: -

- Vehicle selection
- Vehicle maintenance
- Driver hours, fatigue management and
- Driver training.

The relationship between factors, relevance to operator and government, and outcome, can be tabulated.

Vehicle Selection

Factor	Operator	Government	Outcome
Purpose	Utilisation Marketability	Contract standards	“Cost of capital” issues in contract
Size/capacity	Utilisation Passenger comfort	Contract standards	“Cost of capital” issues in contract
Impact of DDA*	Passenger capacity Utilisation	Contract standards	“Cost of capital” issues in contract
Power/ performance/ braking	Adequate power/performance Continuously reliable braking Need for retarder?	No specification Accreditation responsibility on operator	“Cost of capital” issues in contract
Ease of maintenance accessibility	Maximise	No specification Cost impact on vehicle specification	“Cost of capital” issues in contract
Cost of vehicle	Return on Investment. Cost of Finance	Contract cost	“Cost of capital” issues in contract

*Disability Discrimination Act

Purpose, Size, Capacity and Disability Discrimination Act

The more specific the purpose of the vehicle, the easier it is to agree on a standard vehicle specification. For regional coach operations the vehicle must be attractive, comfortable, have adequate luggage space and ultimately be accessible to wheelchairs.

Size must be such as to offer reasonable seat spacing consistent with maximising load

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capacity. When appropriate the vehicle must be able to be used on a mix of services ensuring an economical level of utilisation.

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Power, Performance and Braking

The vehicle must have adequate power to provide a reasonable timetable over the route being operated, and this will have an impact on fuel consumption. In terrain such as we experience in Tasmania, an auxiliary retarder system is advisable, necessary to reduce the load and reliance on the normal braking system, with the potential to reduce brake service costs. This involves the use of exhaust brakes, or preferably electric retarders. Responsibility for specification in this area is likely to fall on the operator (unless the specification in the contract is sufficiently detailed). The capital cost of such additions to normal chassis specification will lead to difference in vehicle capital related costs within the contract.

Ease of Maintenance Accessibility

Utilisation/keeping the vehicle on the road is important, so ease of maintenance is relevant. This can be reflected in vehicle cost through the addition of additional access panels in the bodywork, and/or possible redesign of chassis and body components.

This will be reflected in the cost of the completed vehicle.

Cost of Vehicle

The above issues are reflected in the total cost of the vehicle. From an operator's perspective there are trade offs between cost and return on investment, performance, utilisation and safety issues. From a Government contract perspective, often it is difficult to appreciate safety related aspects included in the initial specification, the impact on initial investment, and the resultant cost of capital to be included in the contract.

Vehicle Maintenance

Factor	Operator	Government	Outcome
Defective Vehicle Report (DVR) System	Simple, understandable, reliable system	Accreditation standards	Cost in contract Audit requirements Inspections
Maintenance system	Reliable and cost effective system	Accreditation maintenance standards	Cost in contract Audit requirements Inspections
Maintenance facilities	Owned or sub-contract	Accreditation maintenance standards	Cost in contract Audit requirements Inspections
Contract and audit requirements	Cost to do the job properly	Accreditation maintenance standards	Cost in contract Audit requirements Inspections

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“DVR” and Maintenance Systems

From an operators’ perspective, the emphasis is on cost effectiveness – a comprehensive maintenance reporting system which will point up all defects as they occur, and produce adequate and understandable reports on the timing and cost of maintenance. The system must allocate responsibility for both reporting (usually the driver or inspecting mechanic), decision on action (workshop foreman or owner) and for repair (internal or external mechanic).

The format and hence complexity of such reports will be specified in the accreditation standards. It is important that such standards be appropriate to the scale of a particular operation – not too complicated so the one bus school contract operator will ignore them, yet comprehensive enough so that all relevant data for individual buses is retained in larger fleets.

The outcome is again reflected in the cost of operation (including driver vehicle check time and workshop time), administrative time, and external inspection costs, all to be included in the cost of contract.

Maintenance facilities

There are two approaches to maintenance; internal using own staff and facilities, and external using contracted staff and facilities.

In the first case the comments above are relevant. In the second, the willingness of the maintenance contractor to work within the required maintenance and DVR system, and the cost of the conformity, will be reflected in the maintenance costs charged to the operator.

Accreditation and Audit Requirements

Given that accreditation and associated audit standards will be called up in all contractual or other arrangements with operators of regional passenger services, it is reasonable to expect Governments or contracting Authorities will understand the relationship between such comprehensive standards and a reasonable cost of operation, to be reflected in the contract.

It is not reasonable to, on one hand develop high standards of accreditation and audit, and on the other not recognise the reasonable costs of compliance.

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Driver Fatigue Management

Factor	Operator	Government	Outcome
Regulations	Cost effective timetables and rosters	Regulations	Cost in contract Audit
Distances and road conditions - reasonable timings	Cost effective routes and timetables	Service specification Road conditions Bus stop areas	Cost in contract Associated road costs
Market needs	Attractive timetables and routes	Service specification Available roads	Cost in contract

There is an interesting juxtaposition between the need to ensure drivers obtain regular quality rest periods, and operational flexibility to meet customer needs, reflected in reasonable timetable speeds (consistent with road conditions).

As an example, reasonable driving time between two towns, given existing road conditions, may be 5.25 hours. However the maximum unbroken driving time allowed is five hours, thus requiring a break for the driver during the journey. This break may or may not be welcomed by the passengers, depending on the nature of the service.

From another aspect, consider the impact of road conditions. If the roads traversed by the service above were of a standard to allow the journey to be completed within the five hour limit, both customers and operator would be happy, because of the improvement in journey time, and the potential for better coach utilisation.

To the extent that patronage and thus revenue is affected by passenger satisfaction with journey times, and that operational costs are affected by vehicle utilisation, there is the potential for cost or revenue impacts on contract cost. This impact will be larger, the more that road conditions and driving hour regulations are sub-optimal, consistent with safe operation.

Driver Training

Factor	Operator	Government	Outcome
Licence Standards and Certification	Consistent across all States	Common standards Agreement	Consistent accreditation and operating standards
Training	Cost/investment Time involvement Improved customer	Training standards Recognised trade qualifications	Consistent driver standards Recognized

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	service		“trade” qualifications
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While the situation is improving, there are still some differing driver licensing requirements between States.

While most operators see driver training as an investment in improved customer service and operational practices, this is not yet a universal situation. Accreditation of operators will address this situation, with the ability to require a minimal level of driver qualification and training. For example to the extent that the maintenance system requires vehicle checks which are best carried out by the driver, there could be a requirement that drivers undertake training to ensure they know what to look for in daily vehicle checks.

Another requirement could be where services operate in tourist areas, for instance on Tasmania’s West Coast. It could be possible that operators operating in such areas are required to have drivers who have received training in customer service. Where certain operations take place in areas subject to hazardous conditions, there could be a requirement that drivers have received training in handling such conditions.

To date, driver requirements included in contracts beyond basic conformity with regulations have been minimal (Annex 2).

Conclusion

In the area of regional coach operation, despite the fact that Governments seek to contract out of safety related responsibilities, there remains a responsibility as representative of the community, to ensure that operations are as safe as possible.

This responsibility is reflected in two ways; in the conditions called up in accreditation, requirements, and in regulations promulgated in regard to overall operating conditions.

To the extent that these requirements impact on vehicle selection, maintenance requirements, driver hours/fatigue management, and driver training there are trade offs between the sophistication and extent safety related matters are taken, and the overall cost of operation. It is not suggested that there is a trade off between cost and safety, rather that the cost implications of the safest forms of operation must be recognised as a legitimate cost in contract negotiations with regional coach operators.

Annex 1

Sample Draft Contract Clauses

“Without prejudice to the preceding (insurance) provisions ...the Contractor will indemnify and keep indemnified the (Government) from and against all actions, suits, demands, claims, cost and expenses in respect of or arising from: -

- a) death of or injury to any person; or
- b) damage or loss to any person or to property of any person;

arising out of or relating to or connected with the provision of the Service and caused or contributed to by any act or omission on the part of the Contractor or an employee or agent of the Contractor.”

“The Contractor must keep the (Government) indemnified against any loss, damage or legal liability which may arise in respect of personal injury to or death of any person or for damage to property howsoever arising from the carrying out of the Service to the extent that such unitary death or damage is attributable to any act or omission negligent or otherwise of the Contractor”

Annex 2

Sample Contract Conditions Relevant to Drivers

“All drivers engaged in the provision of the Service must:-

- (a) hold the necessary licence and other qualifications(*), approval or certification from time to time required by law, to lawfully drive the Vehicle in the provision of the Service;
- (b) have a thorough and detailed knowledge of the Approved Service and Approved Timetable; and
- (c) be clean and tidy and attired in clean, well maintained clothing.”

* This covers requirements for operating in proclaimed “Hazardous Areas”

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References

Australian Road Safety Bureau (January 2001);e-mail enquiry.

Federal Office of Road Safety (1997); Monograph 17.

Federal Office of Road Safety 1999;
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