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PASSENGER COACH SAFETY

Report of the House of Representatives
Standing Committee on Transport Safety

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HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON TRANSPORT SAFETY

Terms of Reference

On 27 February 1985, the Committee was appointed by Resolution of the House of Representatives to inquire into and report on:

(a) the most effective means in terms of cost and efficiency of achieving greater transport safety in Australia
(b) the main causes of air, sea, rail and road transport accidents in Australia
(c) the particular aspects to which those concerned with transport safety could most advantageously direct their efforts
(d) the economic cost to the community of transport related accidents in Australia, remedial measures and equity considerations in the burden of cost
(e) those sections of the community most affected by transport related accidents, and
(f) occupational health and safety issues in the transport sector.

The Committee, on 28 February 1985, resolved to continue the Inquiry commenced in the previous Parliament into the safety of passenger coach transport with particular reference to:

(a) safety statistics
(b) training and licensing
(c) driving hours, timetabling and differential speed limits
(d) school buses
(e) vehicle standards
(f) maintenance and inspections
(g) interstate regulation and enforcement

Membership of the Committee

Chairperson	Mrs Elaine Darling, MP
Deputy Chairman	Mr Bruce Goodluck, MP
Members	Mr Alexander Downer, MP
	Mr Russ Gorman, MP
	Mr Colin Hollis, MP
	Mr Tony Lamb, MP
	Mr Peter McGauran, MP
	Mr John Mildren, MP
Secretary to the Committee	Mr Allan Kelly
Research Officer	Ms Jenny Ellis

Mr McGauran replaced Mr Tim Fischer, M.P., who resigned from the Committee on 18 September 1985.

ABBREVIATIONS

ABS	Anti-lock braking system
ABS	Australian Bureau of Statistics
ACSVD	Advisory Committee on Safety in Vehicle Design (of ATAC)
ADR	Australian Design Rule
ATAC	Australian Transport Advisory Council
BTE	Bureau of Transport Economics
CDR	Consolidated Draft Regulations
CIA	Central Inspection Authority
DECA	Driver Education Centre of Australia
ECE	Economic Commission for Europe
ETLD	Education, Training and Licensing of Drivers Report
FORS	Federal Office of Road Safety
gvm	gross vehicle mass
HORSCORS	House of Representatives Standing Committee on Road Safety
ILO	International Labor Organisation
ITC	Industry Training Committee
NRFII	National Road Freight Industry Inquiry
NRTITC	National Road Transport Industry Training Committee
pkt	passenger kilometres travelled
vkt	vehicle kilometres travelled
TARU	Traffic Accident Research Unit
TRB	Transport Regulation Board, Victoria
TWU	Transport Workers' Union
VSAC	Vehicle Standards Advisory Committee (of ATAC)

CONTENTS

Recommendations

The Committee recommends that:

1. The Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to develop standard guidelines for authorities responsible for the recording of bus and coach accidents. These guidelines should outline the criteria to be used when recording details of accidents and be uniform between the States.

(Paragraph 44)

2. The Minister for Industry, Technology and Commerce ensure that all imported trucks and buses, including second hand vehicles, meet current Australian Design Rules at the time of importation.

(Paragraph 58)

3. (a) The Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to prepare standards in the form of an Australian Design Rule for heavy vehicle tyres.

(b) The Minister for Transport and the Attorney-General ensure that all tyre standards in Australian Design Rules be incorporated in a Product Safety Standard under the Trade Practices Act.

(Paragraph 63)

4. The Minister for Transport seek the cooperation of the Australian Transport Advisory Council to give immediate consideration to making auxiliary braking systems mandatory for all heavy vehicles.

(Paragraph 72)

5. The Minister for Transport in cooperation with the Australian Transport Advisory Council:

(a) monitor European developments on standards for bus roll-over strength to assess their suitability for adoption in Australia.

(b) develop and implement as soon as possible an Australian Design Rule setting standards for bus roll-over strength.

(Paragraph 76)

6. The Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to implement proposals for seat belts to be fitted to front row and rear centre passenger seats in conjunction with the introduction of a standard to ensure the strength of seat structures and anchorages, together with adequate energy absorbtion properties.

(Paragraph 96)

7. (a) The Minister for Transport encourage the States and Territories to introduce compulsory vehicle maintenance programs endorsed by the Australian Transport Advisory Council, for all coach operators and that the records kept by companies be available for inspection at any time by the enforcement authorities; and

(b) The Minister for Transport require observance of compulsory vehicle maintenance programs for all coach operators licensed under the Interstate Road Transport Act 1985.

(Paragraph 107)

8. The Minister for Transport seek through the Australian Transport Advisory Council the development of inspection procedures and requirements, including regular inspections supplemented by an extensive system of random checks, to be implemented in all States and Territories and through the Interstate Road Transport Act 1985.

(Paragraph 118)

9. The Federal Office of Road Safety conduct a study on the efficacy of training courses for bus and coach drivers.

(Paragraph 123)

10. The Minister for Employment and Industrial Relations and the Minister for Transport, through the Australian Transport Advisory Council, encourage the States to develop pre-licence training programs through TAFE colleges, in consultation with State Industry Training Committees.

(Paragraph 132)

11. The Minister for Transport, through the Australian Transport Advisory Council, encourage the States to:

(a) make it compulsory for all passenger coaches to carry first aid kits;
(b) introduce legislation protecting those giving assistance at the scene of an accident from subsequent civil action as a result of that action; and
(c) include first aid training in pre-entry training programs for coach drivers.

(Paragraph 144)

12. The Minister for Transport seek the cooperation of the Australian Transport Advisory Council to extend the graduated licence proposal to include bus drivers.

(Paragraph 153)

13. (a) The Minister for Transport, through the Australian Transport Advisory Council, seek the cooperation of the States and Territories in implementing uniform tests for bus driving licences; these tests would be

performed using a vehicle that is representative of the licence category and would be conducted by qualified examiners holding at least an equivalent licence.

(b) The Minister for Transport, through the Australian Transport Advisory Council, encourage the States and Territories to conduct bus licence re-testing every three years for bus drivers.

(Paragraph 158)

14. The Minister for Transport seek the cooperation of the States and Territories in examining the feasibility of a special licensing test and endorsement for drivers towing caravans beyond a small size.

(Paragraph 162)

15. The Minister for Transport, through the Australian Transport Advisory Council, seek the cooperation of the States in increasing the speed limit for buses to the general speed limit as specified in the fast-track package.

(Paragraph 175)

16. The Minister for Transport, through the Australian Transport Advisory Council, encourage the States to implement approval procedures for bus timetables, prior to publication, ensuring compliance with regulations on speed limits and driving hours.

(Paragraph 181)

17. The Minister for Transport introduce regulations making it a condition of interstate operator licensing that operators and drivers observe relevant road laws.

(Paragraph 182)

18. The Federal Office of Road Safety undertake a study of the relationship between driving hours, fatigue and safety in the passenger coach industry.

(Paragraph 195)

19. The Minister for Transport introduce regulations under the Interstate Road Transport Act 1985 covering driving hours so that they are uniform across Australia and applicable to all operators and companies.

(Paragraph 200)

20. The Minister for Transport implement regulations under the Interstate Road Transport Act 1985 to require tachographs to be fitted to all long-distance interstate coaches and that tachograph records be used for the enforcement of speed and driving hour regulations.

(Paragraph 216)

21. The Minister for Transport, through the Australian Transport Advisory Council, encourage all States and Territories to fit flashing warning lights to all school buses.

(Paragraph 258)

22. The Minister for Transport, through the Australian Transport Advisory Council, encourage all States and Territories to investigate and report on aspects of school buses relating to the safety of passengers, such as adequacy of seating, suitability of hand grips, driver training and other areas of concern defined in this report; and where appropriate, to initiate action to ensure that school bus runs meet the highest standards of safety.

(Paragraph 264)

SUMMARY

The Inquiry into Passenger Coach Safety arose out of claims that high competition and fare discounting in the industry were leading to cost-cutting measures adversely affecting safety.

Statistical data on accidents involving coaches is inadequate. At present the data is poorly collected and there is an obvious need for improved, uniform collection techniques to be adopted by all States and Territories.

The Committee, however, found no statistical evidence to support the claims that coach accidents are increasing, nor to support the view that the operating practices of some companies are contributing to an increase in crash frequency.

For all bus travel in Australia in 1983 the fatal crash rate was 3.9 per 100 million vehicle kilometres travelled while the fatality rate was 0.11 per 100 million vehicle kilometres travelled. The fatal crash rate in 1981 was 0.19 per 100 million passenger kilometres travelled for coaches, compared with 1.35 for cars and 4.20 for trucks. These figures, despite the inadequacies mentioned, clearly show that bus and coach travel is a safe form of road transport.

The safety of significant public transport modes must be ensured and the coach travel sector has shown substantial growth in the last five to six years. Although claims were made that the strong competition in the coach industry was reducing the mechanical safety of vehicles the Committee found that inspections by regulatory authorities did not substantiate these claims. There will always be the temptation for an operator to ignore the rules and jeopardise the safety and the reputation of the industry. It is necessary that check procedures be employed which detect and deter such operators without unduly hindering the majority of operators who comply with the law.

The Committee strongly believes that compulsory vehicle maintenance programs and regular inspection procedures reinforced by random checks will help to ensure that vehicles are maintained in a safe, roadworthy condition.

Driving skills obviously play an important role in ensuring the safety of passenger coach travel. At present there is no legal requirement in Australia that coach drivers undertake specific training. The Committee feels that driver training prior to entry into the industry together with the introduction of the graduated driver licensing scheme will promote the concept of the progressive development of attitude, knowledge and skills needed for safe driving.

Present variations in State and Territory transport regulations only serve to hinder the effective operation of coach services. These pointless inconsistencies are all too evident where a service crosses several State boundaries in one trip. The

Committee fully supports standardisation between the States of licence classifications, driver tests, driving hours and speed limits to facilitate a consistent and effective approach to traffic regulations. The Committee believes that the speed limit differential which presently exists between coaches and other vehicles should be eliminated. This is just one of the measures outlined in the Government's fast-track package and which requires the initiative of the States to introduce such a reform.

The introduction of the fast-track package will help to ensure safe operating practices within the coach industry. This includes the Interstate Road Transport Act which provides for the operator licensing system and the elimination of vehicles operating on "IS" plates. Provisions for random checks and monitoring devices will greatly assist the promotion of a safe industry.

Much of the evidence taken by the Committee, particularly that given by members of the Transport Workers' Union and coach companies, concentrated on the relative safety merits of two-up driving and staged driving. Claims were heard that two-up driving is unsafe and that it produces a greater level of fatigue in drivers than staged driving. However, the Committee found that the evidence on this subject was largely anecdotal and that research evidence on driver fatigue was inconclusive. The Committee concluded that there is no clear safety disadvantage of one coach driving system over the other.

The Committee looked at school bus safety and found that despite limited data being available there was no evidence of substantial safety problems in this area. Several aspects were identified as warranting improvement. Better monitoring of school buses would prevent overcrowding. Warning lights activated when school buses are setting down or picking up would improve child pedestrian safety in these situations, as would painting school buses in distinctive colours. Limiting the speed of other vehicles passing a school bus where the warning lights are activated might also improve this area of pedestrian safety.

The Committee finds that overall coach and school bus safety is relatively high in road safety terms. Road safety in general is very much in need of improvement beyond the quite marked improvement that has occurred over the last fifteen years. Since the early 1970s an increasingly more professional approach has been brought to road safety problem management. The money available for road safety research and subsequent programs is limited and priorities must be established both in terms of the size of a particular problem and how amenable it is to change.

The statistical evidence, although limited in many aspects, shows clearly that coach travel is relatively safe. It is not therefore as great a road safety priority as other areas with serious problems. However, a number of aspects have been identified as problem areas where improvements can and should be made. As coach travel increases in popularity it is essential that present safety standards are monitored and maintained.

CHAPTER ONE

INTRODUCTION

Background to the Committee

1. The Inquiry into Passenger Coach Safety was started by the Standing Committee on Road Safety in the last Parliament, however that Committee was not reappointed in the 34th Parliament. It was replaced by the Standing Committee on Transport Safety[1] which continued the two Inquiries that were unfinished in the last Parliament. These were the Motorcycle and Bicycle Helmet Safety Inquiry, which was reported on in November 1985, and the Passenger Coach Safety Inquiry. The first public hearing on the Passenger Coach Inquiry was held in Canberra on 6 May 1985 by the Transport Safety Committee.

Background to the Inquiry

2. There have been major changes in the long distance coach industry since the late 1970s. These changes can be attributed in part to the entrance of new major operators, particularly at the interstate level, into an expanding passenger market. Fare discounting by the new entrants has been a feature of the increased competition in the industry and the travelling public has responded to the growing attractiveness of this mode of travel. The rapid growth that has occurred over the last few years in the coach travel sector, as compared to other modes of travel, is shown in the survey results in Table 1.

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1. Appointed 27 February 1985.

TABLE 1
DOMESTIC TRAVEL IN AUSTRALIA
Main Transport Used 1980-1984
NUMBER OF TRIPS (Sample Only)

Transport Type	1980/81	Percent change 1979-80	1981/82	Percent change 1980-81	1982/83	Percent change 1981-82	1983-84	Percent change 1982-83
Air	4935	+ 8.3	4692	- 4.9	4357	- 7.1	4356	-
Bus, Coach	1573	+ 2.4	1810	+15.1	2036	+12.5	2242	+9.1
Private Vehicle	42468	+ 7.2	43106	+ 1.5	43495	+ 0.9	45007	+3.3
Rented Vehicle	321	+11.6	374	+16.5	346	- 7.5	366	+5.4
Train	2168	+ 7.3	2332	+ 7.6	2491	+ 6.8	2526	+1.3
Ship, Boat, Ferry	337	- 8.0	348	+ 3.3	235	-32.5	260	+15.3
TOTAL	51802	+7.1	52662	+1.7	52960	+0.6	54757	+3.4

Department of Sport, Recreation and Tourism. "Domestic Travel in Australia" (1980-1984 issues).

3. The Inquiry arose out of claims by both the Transport Workers' Union (TWU) and some of the longer-established companies, that high competition and fare discounting in the industry was leading to cost-cutting measures adversely affecting safety. These claims were primarily directed at express services and in particular at newer entrants to the industry.

4. The TWU claimed that some operators were able to offer discounted fares because their drivers are paid low wages and forced to drive long hours, and because money is not spent on necessary maintenance. Some drivers alleged that incidents they had experienced while driving, such as driving with faulty brakes, "show a potentially life-threatening lack of maintenance within some interstate bus companies."[2] The manager of Greyhound

2. "The price is right, but danger rides the 'yippie bean' express," Sydney Morning Herald, 20 February 1984.

Coaches Pty Ltd, Mr R. Penfold, supported the view that many of the discounted fares offered could only be possible if correct award wages and driving hour regulations were not being adhered to. He stated that "(if) the discount operators are cutting corners in these areas it is open to question whether they are maintaining their coaches properly."[3]

5. In May 1984 concern was expressed in the House of Representatives about allegations relating to the safety and operation of some interstate coach companies, including travel schedules, two-up driving and driving hours. As a result of general community concern over these doubts about the safety of coach travel the matter was referred to the House of Representatives Standing Committee on Road Safety by the Minister for Transport, the Hon. P. Morris, M.P.

6. If the allegations made about safety breaches in the coach industry were correct then this would be reflected in coach accident rates. Early in the Inquiry the Federal Department of Transport told the Committee that "travel by coach has been and continues to be the safest form of road travel". The Department went on to say "there is no statistical evidence that current operating procedures have contributed to crashes, nor..... any evidence that competition fosters unsafe practices"[4]. These statements contradicted the initial claims which were instrumental in the establishment of the Inquiry.

7. Long distance coach travel is an important public transport mode. The object of the Inquiry has been to ensure that coach travel, with its recent growth and economic attractiveness, maintains a high level of safety. To achieve this it was necessary for the Committee not only to investigate the claims and counter-claims that were made about the industry but also to look at all aspects of coach travel that could affect the safety of this mode of travel.

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3. "Questions on safety", Sunday Mail, 13 May 1984, p.2.
4. Evidence, p.6.

8. Although safety statistics on the industry are poorly collected and it is therefore difficult to accurately identify trends, the Committee's findings confirm the views expressed by the Department of Transport. From an examination of the statistics the Committee found no evidence to substantiate the claims of widespread unsafe practices that had been levelled at some operators in the industry.

Two-up driving

9. The Committee noted that the issue of two-up driving as opposed to staged driving dominated much of the discussion at public hearings, particularly where evidence was given by members of the Transport Workers' Union and by individual bus companies. It was not originally the intention of the Committee to concentrate on this issue, however many allegations had been made about two-up driving and it was therefore necessary to establish whether in fact the allegations were justified.

Definition of passenger coaches

10. A bus is usually regarded as a short distance vehicle with basic appointments, typically used on urban route services or for carrying school children. A coach is equipped with more passenger comforts and tends to be used on long distance route services or for tourist or charter work. The Inquiry concentrated its investigations on long distance services as it was this sector of the industry that the initial allegations had been made against. A number of complaints had been received by both the Committee and the Minister concerning the safety of passengers on school bus services. Consequently the safety of school bus travel was also included in the Terms of Reference.

Description of the industry

11. The long distance passenger coach industry comprises a number of diverse sectors, including scheduled interstate and intrastate route services; scheduled tourist services and charter services.

12. Any operator can undertake interstate services, provided that basic State vehicle and driver requirements are met. The intrastate market, however, is not so easily entered. Coaches serving intrastate routes are subject to licensing by the relevant State or Territory authority, which restricts the number of operators and routes served. Generally, intrastate coach services have not been permitted to compete with passenger rail services and each route has been served by a single operator. Some States have substantially relaxed these constraints on coach service licensing in recent years.

13. A study of the industry by the Bureau of Transport Economics (BTE) identified approximately 50 operators providing long-distance coach travel throughout Australia. The majority of these provide only intrastate services while about 10 operators provide intercapital services[5]. Four major operators dominate the interstate coach market: Ansett Pioneer, Greyhound, Deluxe Coachlines, and Australian VIP Leisure Tours. Intrastate services are generally dominated by operators specific to the individual States. The four major interstate operators also have some pick up and set down rights within States although these generally apply to their intercapital services.

14. It has been estimated that there are approximately 200 to 250 coaches operating on the major intercapital routes.[6] This number would increase in the peak periods with the greater use of subcontractors' coaches usually used for other operations such as tours and charters.

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5. Bureau of Transport Economics, Australian Long Distance Coach Industry Review, Occasional Paper 74, AGPS, Canberra, 1985, p.3.
6. BTE, p.4.

Interstate regulation

15. The policies of both Federal and State Governments influence the conditions under which transport services operate. Governments may influence the structure of transport services by their involvement in providing services such as railways and road networks, and their regulation of the transport system.

16. Although under the Constitutional division of powers the regulation of the long distance coach industry is essentially a State matter, States are unable to fully regulate interstate coach services. There are, however, quite substantial powers available to the Commonwealth to regulate passenger coach services. Personal safety has traditionally been regarded as a proper subject for regulation that is consistent with section 92 of the Constitution, which states that '... trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.'[7]

17. Regulation of the bus and coach industry in Australian can be divided into economic regulation, and safety and technical regulation.

Technical and safety regulations

18. Vehicle and traffic regulations of a State or Territory apply to all buses and coaches, whether used for interstate or intrastate carriage of passengers. These regulations cover vehicle registration, roadworthiness and traffic rules such as vehicle speeds, blood alcohol concentrations and hours of driving. Where vehicles cross state or territory borders there may be problems in enforcing some regulations such as driving hour limits. Several witnesses drew attention to the difficulties of manufacturers and operators in meeting different vehicle requirements in different states and territories.

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7. Opinion of the Attorney-General's Department, 24 April 1985, p. 6.

19. Measures recently introduced in Federal legislation in the Interstate Road Transport Act 1985 make provision for the effective regulation of interstate coach services. Regulation would be through the introduction of a system of operator licensing and vehicle registration for operators engaged in interstate trade and commerce. It is intended that the administration of the Federal schemes will be undertaken by the States and Territory Governments as they already have the experience and administrative infrastructure substantially in place. Operators who use vehicles solely for interstate, State/Territory, and Territory/Territory operations may choose to register their vehicles under the Federal scheme. However, any vehicle which has full State or Territory registration can still engage in interstate trade and commerce. Where a vehicle is registered under the Federal scheme the owner will be required to ensure that, amongst other things, the vehicle has been inspected by an approved authority, the vehicle is safe and that requirements relating to insurance have been met. Where a vehicle does not meet safety requirements or have appropriate insurance, it is not to be driven on the roads and the appropriate authority can cancel or suspend registration.

20. The operator licensing scheme is based on the recommendations of the National Road Freight Industry Inquiry which found that current enforcement of road safety regulations in the road transport area focuses almost entirely on the individual driver. The Inquiry recommended a system of operator licensing which would extend the scope of responsibility for road safety to all those who influence and effectively control critical safety standards such as vehicle speeds, driving hours and rest periods.

21. Operator licensing provisions of the Act are to be introduced in conjunction with similar schemes operated by the States. All operators involved in interstate trade and commerce will be required to hold a Federal or State operator's licence.

Those persons who operate in a manner that compromises public safety will, under the legislation, be disqualified from participating in the interstate road transport business. Quality licensing is seen as being a more effective instrument for promoting road safety than economic control of entry to the industry which is seen as being ineffective. The legislation prohibits the further registration by States or Territories of vehicles which are registered on "IS" plates for interstate trade only and which have been avoiding normal inspection procedures.

22. The introduction of these new measures and stricter enforcement of existing regulations will further improve industry safety, particularly with regard to driver behaviour aspects such as hours of driving and speeding. If enforcement policies are to be effective, however, there is a need for the standardisation of regulations between the States and Territories.

Economic regulation

23. The coach industry is free from any form of economic regulation at the interstate level by virtue of section 92 of the Constitution, which places severe constraints on economic regulation of interstate road transport. On the other hand, the intrastate industry has been commonly subject to extensive economic controls in terms of entry, route, schedule and price controls. The relative ease of entry into the interstate long distance coach industry is largely attributable to the absence of such regulatory constraints on interstate route services.

24. It was argued by several witnesses that the unregulated nature of interstate coach passenger services has threatened the economic viability of the whole industry and has had a detrimental effect on the standard of safety within the industry. Unrestricted entry to the industry by operators unskilled in business practice are said to have resulted in too many coaches

competing for too few passengers, which has in turn resulted in "price wars" in terms of fare discounting.[8] However, the Bureau of Transport Economics study of the Australian Long Distance Coach Industry concluded that it was "unable to identify any conditions present in the interstate coach industry which constitute a failure of the market and which would justify government intervention.[9] The study found that conditions which might produce failure in the market by encouraging "cut-throat" competitive practices were largely absent.

National Road Freight Industry Inquiry

25. The Report of the National Road Freight Industry Inquiry (NRFII) was presented in September 1984. Although the Inquiry was primarily concerned with trucking, a number of the issues addressed in the report were relevant to the bus and coach industry. The recommendations include:

- an upper speed limit of 100kph outside built-up areas;
- safety inspection of vehicles to be consistent in all States and include regular inspection and random checks;
- the introduction of a graduated driver licence scheme;
- driver licence tests to be consistent and uniform througout the States;
- short training courses to be available through technical colleges;
- the installation of tachographs; and
- a standard road accident reporting document for uniform adoption throughout Australia.

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8. Evidence, pp. 227, 901.
9. BTE, p.92.

Previous Committee reports

26. Some of the issues raised in this Inquiry have already been the subject of previous reports to Parliament by the Road Safety Committee. The Road Safety Committee tabled a report on Heavy Vehicle Safety in 1977 which among other things made recommendations on frame strength, braking, design standards for buses, seat belts and seating, and inspection schemes. The Report on Education, Training and Licensing of Drivers tabled in 1982 made recommendations on training for professional drivers and on graduated licensing. The fact that some of these recommendations have not been implemented has made it necessary for the Committee to consider these issues once again.

CHAPTER TWO

SAFETY STATISTICS

Introduction

27. Official accident statistics provide the means by which the magnitude and characteristics of vehicle crashes can be identified. Without a comprehensive and uniform set of collection practices and procedures it is not possible to compile an adequate data base which will allow the accurate identification of accident trends.

28. At present, accident information is gathered by police when an accident is reported. While guidelines are available to police officers in the recording of accident details these vary between States and frequently do not provide for the separate identification of buses. In most cases, fatal accidents are more thoroughly and carefully investigated and recorded than other accidents. Although fatal accidents may be examined carefully, their analyses often have shortcomings that lead to difficulty in interpretation of the data. There is a considerable amount of data available on road crashes resulting in fatal and other injuries to the occupants of private passenger vehicles, cyclists and pedestrians, however it appears that coach accident statistics are inadequate and in some cases not separately identifiable.

Inadequacy of existing data

29. A major problem with the present arrangements for recording accidents involving buses is that in some States bus accidents are included in aggregate categories not relating specifically to this travel mode. For example, data on bus

accidents may be included in the "other" category, which includes trucks and other heavy vehicles.

30. The Committee heard that most States collect little or no separate data at all on bus accidents, and the type of information that is collected varies between the States. It is of concern to the Committee that the recording of data on the safety record of coach travel is inconsistent and uncoordinated between the States.

31. Even where bus statistics are collected separately from other heavy vehicles, official crash statistics often fail to distinguish between the type of service or the use of the vehicle. Bus crashes and casualties occur mainly in urban route service, but this category of crash is not always recorded separately. Table 2, for example, was given in evidence by the Queensland State Government.[1]

TABLE 2

VEHICLES AND ACCIDENTS, QUEENSLAND, 1983

UNIT TYPE	NO. ON REGISTER AS AT 30.6.83	NO. OF TOTAL ACCIDENTS	PROPORTION One is to
Omnibus	7,700	189	41
Car or Utility	1,318,600	14,328	92
Rigid Truck	57,500	768	75
Articulated Vehicle	8,700	490	18
Motorcycle	99,000	1,777	56

32. These statistics indicate that, proportionately, buses had the second highest number of total accidents. One bus in 41 was involved in some form of accident in 1983. These statistics may appear alarming at first glance but it should be remembered that they do not distinguish between the various types of bus services, nor do they account for the exposure of these vehicles.

1. Evidence, p. 859.

33. The importance of considering these factors when collecting and organising accident data is confirmed from evidence given by the State Government of Western Australia. Table 3 shows the breakdown of bus types involved in accidents in Western Australia from 1980 to 1983. The statistics reveal that, where the bus type was known, 84 percent of those involved in accidents were omnibuses and only 1 percent were tourist coaches. The statistics highlight the importance of having standardised measures for recording accident data. The data does not account for exposure rates which would explain the high percentage of accidents in the 'omnibus' category as urban buses travel a large number of kilometres in heavy traffic conditions. Raw accident data such as these are inadequate measures of the safety of bus travel.

TABLE 3
Bus Types Involved In Reported Road Traffic Accidents
Western Australia

Bus Body Types	Accident Year 1980	1981	1982	1983	Body Type Distribution (Where Known)
Omnibus	295	269	234	273	84%
Tourist Coach	3	2	6	2	1%
School Bus	22	20	22	22	7%
Micro Bus	5	4	5	7	2%
Bus Type Not Stated	19	24	20	21	7%
	241	149	199	181	
TOTAL	585	468	486	506	

Source: W.A. State Government, evidence, p.482.

34. Many bus companies collect their own data, however these collections are primarily for use by the individual companies and are not readily accessible to others. Some of the records kept by companies are quite comprehensive but they are of little use on their own in identifying trends in the industry if companies do not all keep similar records. Since July 1982, Ansett Pioneer has filed accident records on computer and these records are now

readily examined. Detailed records are kept of the types of accidents involving the company's buses and the reason for the accident[2].

35. The varied and inconsistent reporting criteria employed by the different State road accident reporting agencies hinders road safety measurement, assessment and planning for improvement and concerns the Committee. In one State, for example, bus crashes are divided into 'metropolitan' and 'rest of State'; in another State they are divided into 'low speed' and 'high speed' areas. In some States the criterion for 'injury' is different when recording a crash and when recording the number of casualties[3].

36. Concern was expressed by one witness that records of coach and bus accidents contain very little technical information to enable the study of the causes, if they are mechanical, of these accidents[4]. It is important that these details are gathered and recorded in order that mechanical problems can be identified and that any trend towards lack of maintenance of vehicles would be apparent at the earliest opportunity.

National statistics

37. The only comprehensive set of comparative statistics available which includes coach accidents is of fatal accidents in 1981. This is the Fatals File from the mass data base of the Federal Office of Road Safety. 1981 is the first year for which complete figures are available and later years will be added when the analysis and compilation required is completed. These statistics although for one year only provide an indication of the safety performance of the coach industry compared to that of trucks and cars.

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2. Evidence, p.196.
3. Evidence, p.9.
4. Evidence, p.330.

Accidents Involving Fatalities 1981

Total	Car	Truck	Coach
2893	2428	462	3

Source: BTE Australian Long Distance Coach Industry Review, p.85.

38. Raw accident figures can be misleading if not standardised for exposure. To obtain a more correct analysis of these accident rates it is necessary to look at figures based on exposure to risk and total annual passenger kilometres travelled. Table 4 shows that the coach total accident rate per 100 million passenger kilometres travelled is approximately 7 times less than for cars.

TABLE 4

FATAL ACCIDENT INVOLVEMENT BY TYPE OF VEHICLE, 1981

Vehicle type	Annual passenger kilometres travelled (million)	Number of fatal accidents	Rate per 100m passenger kilometres
Car	180 000	2428	1.35
Truck	11 000	462	4.20
Coach[a]	1 551[b]	3	0.19

a. Interstate only
b. Based on 15 percent annual increase in passenger kilometres travelled since 1980, and 75 percent load factor.

Source: BTE Australian Long Distance Coach Industry Review, p.86.

39. The Federal Department of Transport has estimated the likely crash history of long-distance coaches, and exposure to crashes, using data supplied by State agencies or data from various published reports. It was estimated that in 1983 long distance coaches were involved in four fatal crashes and 35-40 casualty crashes; they travelled almost 290 million vehicle kilometres and passengers travelled about 8560 million person kilometres. Table 5 gives crash and casualty rates per 100m vehicle kilometres and passenger kilometres travelled.

TABLE 5
BUS AND COACH CASUALTY RATES: 1983
All = total in State; LD = long distance in State

STATE	Crashes Per 100m vkt				Casualties per 100m pkt			
	FATAL		CASUALTY		FATALITIES		INJURIES	
	All	LD	All	LD	All	LD	All	LD
NSW	4.2	1.0	27	9.0	0.10	0.03	0.86	0.43
VIC	6.4	1.9	25	9.7	0.17	0.10	1.1	0.44
QLD	3.4		20		0.09		0.71	
WA	1.6	6.0	22		0.06	0.3	0.64	
SA	4.5	0.9	136	28.7	0.14		0.81	
NT	0	0	33	31.4	0	0	0.41	0.59
TAS	0	0	7.4		0	0	0.43	
ACT	0	0	103		0	0		

Source: Federal Office of Road Safety, evidence, p.11.

The four fatal crashes resulted in a rate of 1.6 fatal crashes per 100 million vehicle kilometres travelled (vkt). The long distance coach fatality rate was 0.05 killed per 100 million passenger kilometres travelled (pkt) in 1983. For all bus travel in Australia the fatal crash rate was 3.9 per 100 million vkt while the fatality rate was 0.11 per 100 million pkt. The fatal crash rate in 1981 was 0.19 per 100 million pkt for coaches, compared with 1.35 for cars and 4.20 for trucks (See Table 4). These figures, despite the inadequacies mentioned earlier, clearly show that bus and coach travel is a safe form of road transport.

Overseas data

40. The International Labour Organisation (ILO) Inland Transport Committee has stated that inadequate collection of bus safety statistics is a worldwide trend. It concluded that bus statistics should be separated from those for general truck safety and collected for the various areas, that is, truck, bus, taxi and so on[5].

41. Comparable overseas countries also categorise crashes of public service vehicles under the generic title of 'bus' and so the available statistics reveal very little.

TABLE 6
ESTIMATED CASUALTY CRASH RATES -
AUSTRALIA AND UNITED KINGDOM, 1983

	Fatal Crashes per 100m vkt	Casualty Crashes per 100m vkt
AUSTRALIA		
All trucks	3.1	12.5
Articulated trucks	7.4	19.0
Cars	2.1	21.7
Long distance bus (1)	1.6	15.0
All buses (2)	3.9	35.0
UNITED KINGDOM - ALL BUSES (3)		
On all roads		382
On motorways		26
In non built-up areas		104
In built-up areas		563

Notes: 1. Based on data from those states providing data for long distance coach services.
2. Based on data from all states.
3. Taken from personal communication from A.J. Barton, TRRL, UK, and confirmed by Telex.

Source: Federal Office of Road Safety, evidence, p.12.

5. Evidence, p.161.

42. Table 6 shows the estimated casualty crashes per 100 vkt for the United Kingdom as compared to Australia. In comparing the accident rates there is a startling difference - the Australian casualty rate is about one tenth of that of the UK. Part of the reason for the discrepancies in the statistics is the difference in the categories of injury. In the UK there is a category for minor injury, which might include an injury such as a sprained wrist. In Australia these types of injuries are not recorded. These statistics further highlight the importance of having uniform criteria for the collection of accident statistics.

43. The Australian Bureau of Statistics has not published data on vehicle kilometres travelled by buses since 1979. Without this data, crash frequency in terms of exposure cannot be identified as accurately as it should be.

44. The Committee recommends that:

the Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to develop standard guidelines for authorities responsible for the recording of bus and coach accidents. These guidelines should outline the criteria to be used when recording details of accidents and be uniform between the States.

Present developments

45. The FORS Fatals File is a database developed by the Federal Office of Road Safety which records substantial detail for each road accident involving a fatality commencing with the year 1981. This data is collated from a number of sources, coroners courts, engineers reports, etc. The Fatals File will provide details of bus accidents involving fatalities from 1981 onwards. Because of the complexity of the data and the time taken for some information to become available there is a delay in the

completion of information for the file. To date only 1981 statistics are completely available. Although this database will, in future years, provide a very substantial resource containing comprehensive details on accidents involving fatalities it will not provide information on other serious accidents not resulting in a fatality.

46. The Committee is concerned at the lack comprehensive uniform data on non-fatal bus accidents as this data could be of great importance in identifying areas of bus travel where adverse trends are developing or where safety could generally be improved. As one witness commented "the cause and the possible counter-measures are not going to be different whether there is a fatality or an injury or property damage in an accident"[6]. The Committee believes that road accident reporting agencies need to collect adequate uniform statistics of all reported bus accidents.

47. A considerable amount of research has been undertaken into accidents involving long distance trucks and to a lesser degree, accidents involving articulated vehicles. However, little research has been undertaken specifically into bus safety or long-distance coach safety. The South Australian Department of Transport told the Committee that they, together with the Federal Office of Road Safety, are now jointly undertaking a $250,000 study over the next three years into rural road accidents. This study will include truck and bus accidents[7]. The Committee believes it is important that studies such as these are carried out to fill the gap in research in this area.

Conclusion

48. Passenger coach statistics have not received adequate attention as coach safety is not seen as a problem. In the allocation of resources attention has been focussed on problem areas of road safety.

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6. Evidence, pp.1164-5.
7. Evidence, p.605.

49. It is nonetheless a matter of some concern to the Committee that State and Commonwealth transport authorities have not developed adequate statistics to monitor the safety of a significant public transport sector, particularly given the recent rise in the popularity of this mode of travel.

50. The Heavy Vehicles Report in 1977 noted that "a number of serious accidents in recent years has led to consideration of whether bus safety can be improved at a reasonable cost... bus accidents are infrequent and have not been the subject of detailed study." Since this observation was made in the 1977 Report there has been little development in the area of research into bus accidents.

51. It is clear that not all State road safety authorities have considered it a priority to collect adequate data on bus accidents. This is due to the fact that there are few coach crashes, with even fewer involving fatalities. For example, in NSW in 1984 there were 5 coach accidents in which occupants required hospitilisation[8]. The authorities may feel that the frequency of bus crashes is such that recording the data is not warranted, however if safety problems arise in the future the data will not be available to assist in identifying or assessing the problem.

52. Although crash data is poorly collected it is still possible to safely conclude from available statistics that long-distance coach travel is a relatively safe mode of travel. It has been shown that the percentage of fatalities and casualties based on exposure rates is generally much lower than for other types of vehicles.

53. The Committee finds no statistical evidence to suggest that coach crash frequency is increasing, nor to support the view that the operating practices of some companies are contributing to an increase in crash frequency.

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8. Evidence, p.1102.

54. Although the statistics do not support the claims of unsafe practices in the coach industry it is still of the utmost importance that the States and Territories take steps to improve bus accident data collection so that any accident trends within the industry can be readily identified. Improved, uniform collection techniques would ensure that such information is readily available.

CHAPTER THREE

MECHANICAL SAFETY

Introduction

55. Claims have been made that the strong competition in the coach industry has resulted in a reduction in the mechanical safety of vehicles. However, the entry of new operators between 1980 and 1984 has resulted in a substantial reduction in the age profile of the express coach fleet, which has served to improve the overall standard of mechanical safety. The major long established operators have undertaken major fleet upgrading with the purchase of new coaches during 1984.[1] Before the entry of the new operators the established operators were running older fleets, with the average age of coaches used by one operator being around 10 to 12 years. The average fleet age at the end of 1984 was about 2 to 3 years.

56. Design standards for buses are specified by Australian Design Rules (ADRs) and Consolidated Draft Regulations (CDRs), which are formulated by the Australian Transport Advisory Council (ATAC). ADRs are national mandatory standards for all new buses while CDRs are used by States and Territories as a model for their individual regulations. ADRs specify technically complex standards for safety features or for the control of motor vehicle emissions and noise. Laboratory procedures are required in order to test for compliance with ADRs.

57. It is felt that with some exceptions existing design standards provide a relatively high level of passenger protection, apart from a few deficiencies in the matters of seating, brakes, tyres and roll-over strength which will be discussed later in this chapter.

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1. BTE, p.4.

58. Some concern was raised during the Inquiry as to the standard of imported buses. It was claimed that some states will register these vehicles without a compliance plate and that many vehicles are falling short of current safety standards.[2] All imported buses, including second hand vehicles, should meet current ADRs at the time of importation. It is essential that all imported buses are assessed for compliance with current ADRs before customs clearance and that compliance regulations be strictly enforced by the vehicle registration authorities. The Committee recommends that:

> **the Minister for Industry, Technology and Commerce ensure that all imported trucks and buses, including second hand vehicles, meet current Australian Design Rules at the time of importation.**

Tyres

59. Tyres are vital to the safe operation of all road vehicles. It is essential that the use of sub-standard tyres does not jeopardise the safety of the vehicle. Tyres can be sub-standard because of poor manufacture or design, inappropiate use or simply wear and tear.

60. Adequate standards are needed for new vehicle tyres. At present there is no ADR for tyres on new heavy vehicles, including buses. The only tyre standards for buses are those set down in the CDRs, which specify only very general requirements. The need for an ADR for commercial vehicle tyres is currently under review.[3]

61. The Road Safety Committee's 1977 Report on Heavy Vehicle Safety recommended that a program of research be implemented with a view to the drafting of an ADR on heavy vehicle tyres. The Government accepted this recommendation in broad principle but indicated that the Advisory Committee on Safety in Vehicle Design

2. Evidence, p.1082.
3. Evidence, p.17.

(ACSVD) had advised that because of the expense of research programs an analysis of truck accident data was needed to identify the problem areas before a research program could be recommended. It would appear that this long-term project has not been completed.

62. While ADRs can regulate tyres on new vehicles they cannot be used to ensure the quality of replacement tyres. Controlling replacement tyres, not only for buses but for all vehicles, is at least as important as a mandatory standard for original tyres.

63. The Federal Office of Road Safety supports the introduction of an ADR for tyres on heavy vehicles and a control mechanism for replacement tyres.[4] Although the Committee is not aware of any deficiencies in new tyres for these vehicles it feels that to ensure performance characteristics of tyres an ADR is warranted. The Committee therefore reaffirms the conclusions from the Heavy Vehicle Report and recommends that:

(a) **the Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to prepare standards in the form of an Australian Design Rule for heavy vehicle tyres.**

(b) **the Minister for Transport and the Attorney-General ensure that all tyre standards in Australian Design Rules be incorporated in a Product Safety Standard under the Trade Practices Act.**

This latter recommendation would include car tyres as well as heavy vehicle tyres.

64. Ensuring the quality of new tyres through mandatory standards is administratively easier than the next step, which is ensuring that tyres are replaced when they become unserviceable

4. Evidence, p.72.

through wear and tear. Heavy vehicle tyres should be safe when operated within their recommended service limitations. It has been suggested that the most effective way to avoid accidents due to tyre failure would be for regulatory authorities to ensure that vehicle users maintain and operate tyres according to the manufacturers' recommendations, particularly those standards recommended by the Australian Tyre and Rim Association.[5]

65. One TWU witness claimed that replacing new tyres on vehicles with older, worn tyres is a common practice within the industry. He claimed that a "baldy back dual-wheel tyre would be put on the inside where it could not be seen".[6] However, these claims were contradicted by several other drivers. One driver who had been employed by one company for 6.5 years and who drove about 9,000 kms a week, told the Committee that he had experienced only one blowout during this time.[7] Other drivers said that the number of skids, flat tyres or blowouts that they had encountered during their driving careers had been minimal. One operator advised that only new tyres were fitted as replacement tyres as these were more economic than retreads. Although the Committee was provided with no evidence to support the views expressed by the TWU it is nevertheless concerned that replacement tyres are not regulated.

66. The Road Safety Committee's 1980 Report on Tyre Safety concluded that tyres are a causative factor in only a relatively small proportion of accidents in Australia, while at the same time commenting on the inadequacy of the available data. It was suggested that tyres may play a more important role in accidents than existing data generally suggest.[8]

67. To ensure that sub-standard tyres are not being used on vehicles, and thereby reducing safety, it is important that there are mechanisms available to monitor the standards of tyres in use.

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5. Heavy Vehicle Safety Report p.50. Evidence p.1083.
6. Evidence, p.1186.
7. Evidence, p.1214.
8. Tyre Safety Report, 1980, p.73.

This is only possible through inspection procedures. Random inspections are the most effective way of detecting the use of worn or otherwise substandard tyres. Tyres can become unserviceable between registration inspections. It is also possible that inspections at the time of vehicle registration may not detect such tyres as operators would have the opportunity of removing these tyres and replacing them with newer ones. Some witnesses claimed that such practices do in fact take place. If there is any truth to these allegations, a strong system of random inspections would detect those operators using unroadworthy tyres on vehicles. This is particularly necessary for commercial vehicles, such as coaches, travelling large distances between registration inspections.

Brakes

68. Since July 1980 the braking of buses has been specified by ADR 35A, which is based largely on USA regulations. Buses first registered before 1980 may not comply with ADR 35A. However, a major review of heavy vehicle braking is currently being undertaken by VSAC, which is assessing the suitability of the latest Economic Commission for Europe (ECE) braking regulations for their adoption as the ADR for braking.

69. There have been significant developments in heavy vehicle braking systems in recent years. More sophisticated systems such as the anti-lock braking system (ABS) developed by Mercedes Benz have been shown to significantly improve the performance of heavy vehicles when braking. Road tests have shown that the ABS greatly increases vehicle control in all driving conditions and reduces stopping distances and skidding. The ABS and other developments in braking should be looked at closely in formulating a new ADR.

70. The Heavy Vehicle Safety Report in 1977 recommended that consideration should be given to making auxiliary braking a requirement on all buses which may be used on long distance touring. Although auxiliary braking for coaches has not been made

mandatory, most coaches have some form of auxiliary braking fitted, such as an exhuast brake. The Committee was told that there would not be many vehicles operating without such braking systems.[9]

71. The NRFII similarly concluded that immediate attention be given to the fitting of auxiliary braking systems,[10] further reinforcing the conclusion reached by the Heavy Vehicle Report in 1977. Requiring all buses to be fitted with auxilliary braking will not be a burden to the industry. Making auxilliary braking mandatory will require that they be kept in working order.

72. The Committee recommends that:

the Minister for Transport seek the cooperation of the Australian Transport Advisory Council to give immediate consideration to making auxiliary braking systems mandatory for all heavy vehicles.

Structural strength

73. In Australia there are no statutory requirements for the structural strength of the body and chasses of buses. The main reason for this appears to be the high cost which would be involved in determining a standard, which of course involves crash testing of vehicles. The roll-over strength of buses is receiving considerable attention in Europe, but as yet there is no clear definition of appropriate standards. Most witnesses agreed that Australia should await the conclusion of overseas research and the resulting requirements because of the very high cost which is involved in this research.

74. At present structural strength is determined basically by calculation and by a certain amount of rig testing. Although there is no crash testing, sections of vehicles are destroyed to enable the estimation of the general strength of a body as a complete body.[11]

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9. Evidence, p.1235.
10. NRFII Report, p.141.
11. Evidence, p.1094.

75. The Committee was told that Australian coaches are more strongly constructed than those in Europe because of the more damaging effects of many Australian roads on buses. It was stated that there is "no doubt that the roll-over strength of Australian buses would be better than those constructed in Europe".[12]

76. Although the Committee does not question this statement, it is concerned that there are no standards or codes of practice in Australia to ensure that the roll-over strength of buses is adequate. While there is a need for a standard to be determined, the Committee realises that there would be problems in having a standard which was incompatible with those in other relevant countries or which requires impact testing for compliance. While any delay in the implementation of a suitable standard should be avoided, the Committee recognises the advantages of waiting for the European standard. However, it is also important that the standards developed overseas will be suited to the different conditions experienced by vehicles in Australia. The Committee recommends that:

the Minister for Transport in cooperation with the Australian Transport Advisory Council:

(a) monitor European developments on standards for bus roll-over strength to assess their suitability for adoption in Australia.

(b) develop and implement as soon as possible an Australian Design Rule setting standards for bus roll-over strength.

Seating

77. The importance of strong seat anchorages and seat structures in buses is self-evident, however, design deficiencies in this area have been noted by several witnesses.[13]

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12. Evidence, p.1094.
13. Evidence, p.16.

78. The 1977 Heavy Vehicle Safety Report[14] drew attention to the practice by which some bus seats are secured to the plywood floor with bolts which would pull out at a load of about 100kg. In a minor front-end accident it was alleged that all the seats in the bus would pull out from the floor. As well as not restraining passengers, the seat anchorage fittings would then be in a postition to cause injury to passengers.

79. A study on seating requirements[15] revealed relatively low levels of energy absorption in the tests conducted on seats being fitted to Australian buses at that time. Although none of the floor anchorages failed the tests it was felt that these were not stressed to their full capacity because of the relatively low collapse loads of the seat backs which were tested.[16]

80. The most common form of accident for all types of vehicles is in the forward quarter, which represents the worst crash situation in terms of serious injury to passengers.[17] It follows, therefore, that the major impact element within the seated passenger space is the back of the immediately forward seat. Seat backs must be capable of absorbing the force of passengers thrown forward so that injury is minimised.

81. The Committee was unable to ascertain from the evidence whether any notable improvements had been made in the area of seat structures or anchorages since the Department of Transport sponsored study of 1981. Whether there have been improvements or not, the industry recognises that design standards are needed; however, they also agree that, because of the high cost of crash performance testing, proposals for bus seat structure standards should be based on future European standards.

82. VSAC is monitoring the approach and work being done in Europe, specifically by the ECE, which, the Committee was told, is at a fairly advanced stage of developing a standard for seats.

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14. Paragraph 208.
15. Dixon, A.H., Williams, J.F., and Joubert, P.M., Safety Requirements of Bus Seats and Anchorages, Department of Transport, Canberra, 1981.
16. Evidence, p.1085.
17. Evidence, p.1269.

This standard will cover seat strengths, the strength of the mounting of the seats to the vehicle and the physical environment of the seat. The Committee was informed that some results should be evident within twelve months.[18]

83. In response to the recommendations of the Heavy Vehicle Safety Report of 1977, the Government considered energy absorbing seats to be the most promising form of passenger protection. There appears however to have been a notable lack of action to implement these protective measures since then. The Committee trusts that, in fact, the European standard is close to completion and that an acceptable standard of passenger protection on Australian buses can be adopted and implemented without further delay.

Seat belts

84. Seat belts in cars have proved to be a most effective measure in dramatically reducing vehicle occupant fatalities and injuries. There is no doubt that passenger restraint is effective in reducing injury in cars, but road safety authorities have argued that the most efficient method of injury reduction varies for each particular class of vehicle and is dependent on the behaviour of the vehicle in an accident. As a means of providing occupant protection, seat belts are of lesser value in buses which have markedly different characteristics such as size, form of construction, passenger seating densities, and usage. It is recognised that vehicle deceleration during a collision is usually much less severe for a bus than for a car.[19] The installation of any kind of seat belt in urban buses is not practical as the passengers on these vehicles are not seated for long and may have to stand in the aisle if seats are unavailable. They may also be holding parcels or bags and need to disembark as quickly and easily as possible.

85. Seats other than the drivers' and front row seats do not pose an unreasonable safety problem provided that they have

18. Evidence, p.1262.
19. Evidence, p.16.

adequate strength, anchorage and energy absorption properties. Passengers will be adequately restrained if they have an effective seat back in front of them to act as a passive restraint.

86. The Heavy Vehicle Safety Report concluded that newly built inter-urban coaches should be compulsorily fitted with seat belts in conjunction with well padded, high backed seats, and recommended an ADR be prepared to this effect.[20] The Road Safety Committee believed that the need for seat belts in other buses was not justified. The Government rejected the recommendation. The reasons given were that the cost of providing seat belts in inter-urban buses would be high; there would be difficulties in enforcing wearing and ensuring correct usage; and there would be difficulty in differentiating between inter-urban and other buses. The ACSVD considered that the most promising form of omnibus passenger protection is energy absorbing seats.

87. Very few, if any existing large buses have body frames suitable for the fitting of seat belts.[21] Bus interiors lack suitable anchorage points for the installation of seat belts, whether of the lap belt or shoulder type. There would be difficulties in maintaining seat belts in an acceptable condition, particularly where buses are used for a variety of tasks, including school services. Car drivers are responsible for ensuring that children are secured in their seat belts. There would be legal difficulties if bus drivers were responsible for ensuring that passengers, particularly children, wear the seat belts provided.

88. There was general agreement amongst witnesses that drivers of coaches should be required to wear seat belts. Most heavy vehicles already have seat belts fitted or have mountings available to enable belts to be fitted. Where seat belts have been fitted, it has often been left to the discretion of the individual driver as to whether or not the belt is worn. Some

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20. Heavy Vehicle Safety Report, p.91.
21. Evidence, p.371.

drivers oppose the idea of wearing seat belts largely on the grounds that it would create inconvenience and discomfort. However, this is not a valid argument. A study of heavy vehicle crashes conducted by the New South Wales Traffic Accident Research Unit (TARU) showed that a truck driver has a much better chance of surviving and a much lower chance of being injured in a crash if the driver remains within the cab.[22] There is a need to restrain the driver in the seat so that possible secondary collisions can be averted and further injuries minimised. At its meeting in June 1985, ATAC approved a rule which extends the compulsory seat belt rule to all heavy vehicle drivers and front seat passengers including therefore bus drivers. It is expected to come into force some time in 1986.

89. While stronger and better padded seats offer more effective protection to most passengers there are some positions which do not have a protective barrier in front of them. The question of the effectiveness of fitting seat belts to the front row of passenger seats was the subject of considerable discussion by some witnesses. Passengers in the front seats are more susceptible to injury in the event of an accident as they do not have any protection directly in front of them. Similarly passengers in the rear centre seat have no protective barrier immediately in front of them.[23] However, as this seat is rapidly disappearing from buses the issue is not a priority. It may also be easier to provide a seat belt for this position.

90. Many witnesses, including the Department of Transport, supported fitting seat belts to front passenger seats. Proposals for belts in these positions have been considered by VSAC where there was strong overall support for it. However, the details of the proposal as presented had problems of definition. It is believed that the requirements of the rules as presently drafted provide an adequate technical framework for the fitting of seat belts; but there was a problem of definition in that the requirements for buses was based on those for trucks and they

22. Heavy Vehicle Safety Report, p.37.
23. Evidence, pp.1254-5.

therefore did not cater for the passengers behind the driver.[24] As VSAC considered that the requirements should cover all front passenger seat positions, the proposal was referred back to the Human Factors Sub-Committee, which advises VSAC. It is expected that the proposal for seat belts in the front passenger seats will be submitted in 1986.

91. There was strong opposition to this proposal from one witness, who was the industry representative on the Department of Transport's former Expert Group on Crashworthiness, which has been replaced by the Human Factors Sub-Committee. The objections were not aimed at the concept of seat belts in the front row, but at the possible danger to passengers in these seats if the seats and anchor points were not suitably designed.[25] With seat belts fitted to front row seats and passengers impacting from behind, the front seats would be subjected to double loading. These seats would be required to restrain the belted occupants as well as the occupants of the seat behind who would be thrown forward. Emphasis was placed on the importance of addressing strength and energy absorption of the seats before introducing seat belts to front seats.

92. Although the Department of Transport supports the fitting of seat belts to front seats, they also recognise the problems associated with implementing the proposal. The Department told the Committee that "seats ought to have adequate strength and be mounted adequately into the vehicle... it is obviously inappropriate to have front row seat-belts when the seats behind are of inadequate strength."[26]

93. The Committee heard that an alternative to seat belts in restraining front row passengers is some type of 'modesty' panel. This would have the features of an energy absorbing screen, similar to the seats, and would provide the same passive

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24. Evidence, p.1262.
25. Evidence, pp.1246-7.
26. Evidence, p.1267.

retention for the passengers in the front row of seats. This has been recommended by the UK Transport and Road Research Laboratory,[27] but may be unacceptable in tourist coaches.

94. One group of passengers who should be considered when discussing effective passenger restraint is the disabled and frail. The Australian Council for the Rehabilitation of the Disabled have stated that "long distance bus travel is more hazardous for handicapped persons, including the frail elderly, than for other travellers."[28] They conclude that handicapped persons would be more secure if they were restrained by lap-sash belts. Although most handicapped persons travel in private vehicles, the Committee feels that it is important that those wishing to travel on coaches are not deterred from doing so by the lack of safety features for their particular needs. It is possible that fitting seat-belts to the front seats could overcome this problem, as these seats would be available for handicapped passengers when needed.

95. The Committee concluded that the more effective approach to passenger protection is the development of stronger seat anchorages and more energy absorbent seat structures together with seat belts in front row and centre rear seats.

96. The Committee recommends that:

the Minister for Transport seek the cooperation of the States and Territories through the Australian Transport Advisory Council to implement proposals for seat belts to be fitted to front row and rear centre passenger seats in conjunction with the introduction of a standard to ensure the strength of seat structures and anchorages, together with adequate energy absorbtion properties.

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27. Evidence, p.1252.
28. Evidence, p.16.

Maintenance

97. Many claims have been made that competition in the industry has led to cost cutting by reducing the level of maintenance and thereby lowering safety. This allegation is particularly levelled at discounters and newer entrants to the market. This is a central claim that led to the setting up of the Inquiry and which needed examination by the Committee. If the allegations are valid then it would be expected that the lower levels of safety would be reflected in accident statistics since the entry of these operators. As stated in Chapter 2, these claims are not supported by available coach accident statistics. This does not mean, of course, that maintenance is not being overlooked in some instances, nor can it be concluded that a lack of maintenance necessarily results in an accident. On-going poor maintenance procedures can only have the effect of reducing passenger safety and increasing the likelihood of an accident occurring.

98. On a number of occasions the Committee heard evidence from many people within the coach industry, including drivers and operators, of some companies operating with poorly maintained vehicles. One operator claimed that a newcomer to the industry who operated thirty coaches on interstate services would not have necessary repairs carried out to the fleet because of the cost involved, and that "those coaches have been driven into the ground".[29] He also claimed that this attitude is prevalent within the industry. The fleet operator referred to has stated that this is a gross inaccuracy of the condition of his coaches and maintenance programs. The Committee also heard from drivers of their experiences while working for particular companies. A driver claimed that drivers have had to do maintenance on vehicles before taking them out on the road and that on one trip he had to drive a coach on which the brakes worked only on one wheel.[30]

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29. Evidence, p.953.
30. Evidence, p.963.

99. These and many similar claims were made by witnesses who appeared before the Committee. It must be stressed, however, that this evidence was largely anecdotal and difficult to substantiate. The Committee was unable to conclude that there is any widespread practice whereby companies are foregoing necessary maintenance on their vehicles.

100. Many of the allegations made were directed towards one of the larger coach companies engaged in fare discounting. The inspection authorities, however, could not identify any particular companies with a poor standard of vehicle maintenance. The New South Wales Department of Motor Transport told the Committee that, in regard to long-distance intercity coaches, "there is no clear trend that would show that Operator A is better or worse than Operator B".[31] The Department also told the Committee that complaints about the quality of vehicles often come from a driver who had been dismissed by the company. In 1984 the Department followed up some of these complaints and found that they were basically unwarranted and that the fleet concerned was in good condition.[32]

101. The Western Australian transport authorities told the Committee that they have experienced no major problems with vehicles not meeting the required standards.[33] South Australia, however, had a 25 percent failure rate for buses undergoing regular registration inspections in a 9 month period in 1985 (Table 7). These results highlight the importance of thorough inspection procedures and particularly the need for regular random inspections to minimise the possibility of buses which are in need of maintenance being on the road.

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31. Evidence, p.1112.
32. Evidence, p.1110.
33. Evidence, p.507.

TABLE 7
Buses Inspected by S.A. Central Inspection Authority

Bus Inspections (9 mths to 30/4/85)	No. of Buses	Passed 1st Inspection	%
Metropolitan area	1642	1256	76
Country areas	1089	806	74

Principle Causes for Rejection at 1st Inspection
(a bus may have more than one cause for rejection)

Fault	% of buses requiring re-check with listed fault
Steering system	18%
Oil/Fuel leaks	32%
Braking system	60%
Suspension system	5%

Source: S.A. Government, evidence, p.587.

102. Because of the strong competition in the industry it is in the best interest of operators to maintain their vehicles in good condition to ensure that they remain on the road. It is not economically viable for companies to operate with poorly maintained vehicles and to thus take the chance of losing business or incurring considerable costs in the event of a breakdown while carrying passengers. There will always be the temptation for an operator to ignore the rules and jeopardise the safety and the reputation of the industry. It is necessary that check procedures be employed which detect and deter such operators without unduly hindering the majority of operators who comply with the law.

103. Many of the complaints received by the Committee were about poor booking, timetabling or comfort provisions such as air-conditioning. These are important aspects of coach travel but are outside the terms of reference of the Inquiry which are confined to safety. Companies which fail to provide these services are unlikely to attract repeat customers or their friends. The very nature of discounting requires operators to maximise the number of passengers carried per trip. Repeat passengers are an important market segment.

Maintenance programs

104. At present maintenance is largely carried out according to the programs developed by individual companies. The standard of these programs appears to vary considerably. For companies to maintain a high level of vehicle safety it is important that thorough maintenance programs are carried out.

105. South Australia has recently introduced a compulsory passenger bus maintenance program which is essentially that prepared and endorsed by ATAC. South Australia is the first to adopt the program which consists of:

a) a mandatory maintenance schedule with the requirement to maintain specific records,

b) annual inspection of buses by the Central Inspection Authority (CIA),

c) random inspection of maintenance records by CIA, and

d) random inspection of buses as considered necessary.[34]

106. A major thrust of the new mandatory maintenance scheme is that it places a greater, and specifically defined, onus of responsibility onto operators to ensure that buses are adequately maintained. A combination of regular and random checks ensures these responsibilities are met.

107. The Northern Territory is also considering introducing the ATAC maintenance program. Several witnesses, including the TWU, also support the program. The Committee believes that the program will improve the safety standard of vehicles and therefore recommends that:

(a) the Minister for Transport encourage the States and Territories to introduce compulsory vehicle maintenance

34. Evidence, p.584.

programs endorsed by the Australian Transport Advisory Council, for all coach operators and that the records kept by companies be available for inspection at any time by the enforcement authorities; and

(b) the Minister for Transport require observance of compulsory vehicle maintenance programs for all coach operators licensed under the Interstate Road Transport Act 1985.

Inspections

TABLE 8
Frequency of Bus Inspections in Australian States and Territories

Queensland	every 6 months
Australian Capital Territory	every 6 months
Northern Territory	every 6 months
Tasmania	every 6 months
South Australia	every year
Western Australia	every year
Victoria	every year, but can be more often if felt necessary for individual cases.
New South Wales	Private buses in Sydney and Newcastle 4 times a year. Other (urban route) buses and charter/tour buses, every 6 months. Urban transit (Govt. owned) buses, incorporated in routine maintenance schedule. Inspections can be carried out more frequently if necessary in specific cases.

Source: Federal Office of Road Safety, evidence, p.43.

108. Inspection guidelines for all vehicles, including buses, are set out in the Consolidated Draft Regulations (CDRs), which specify the physical requirements for a vehicle to be considered roadworthy. These are used for initial registration inspections and, less exhaustively, for regular re-registration inspections. The CDRs also set out recommendations concerning the application of the inspection guidelines. Vehicle inspection requirements are set down by the government authority in the State or Territory of registration. The frequency of bus inspections required in the States and Territories is shown in Table 8. The registration scheme introduced in the Interstate Road Transport Act 1985 provides for the annual inspection of vehicles prior to registration. Where the vehicle fails to meet the required safety standards a registration authority may refuse to register the vehicle or suspend or cancel registration.

109. The major area of concern regarding inspections is with buses operating interstate. Buses may be away from the state of registration at the time an inspection is required. Although most State inspection authorities will inspect a vehicle which is registered in another State, it will not always be to the same inspection standard and the label certifying inspection is not always affixed.[35] A bus inspection label scheme operates for these buses whereby labels are attached to a vehicle to indicate the inspection status of the bus. The labels are generally recognised on a reciprocal basis by other States and Territories, but the scheme is not endorsed by any formal agreement. The fact that the colour and shape of inspection labels varies between the States and Territories also serves to hinder effective inspection checking procedures.

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35. Evidence, p.226.

110. Random inspections undertaken in Queensland by the Department of Transport "Flying Squad" teams (comprised of officers of the Commercial Vehicle Squad and Transport Inspectors) revealed that 6 omnibuses out of the 84 checked (about 7 percent) did not have current certificates of inspection in force at the time of interception. Two of the six vehicles concerned were registered interstate.[36]

111. In some States, vehicles which are registered for interstate trade only (those on 'IS' plates) are not required for presentation at the inspection centre of the State of registration. It has been quite unsatisfactory that any heavy vehicles, particularly passenger coaches, have not required regular inspections. Although very few vehicles operate on these plates all passenger vehicles should be inspected to the same standard. Recent federal legislation will allow for control over interstate buses that were avoiding normal State inspection procedures under section 92 of the Constitution. The Interstate Road Transport Act 1985 provides for the registration of such vehicles and their inspection, as well as making provision for the licensing of operators of vehicles engaged in interstate trade and commerce.

112. It was claimed that inspections "vary between States and Territories from very good to hopelessly inadequate",[37] and similarly that it is easier to get a bus passed in some States than others.[38]

113. The Road Safety Committee in its Heavy Vehicle Safety Report (1977) recommended that "all States implement the "Uniform Inspection Standard for Omnibuses" as a matter of urgency".[39] It is of concern to the Committee that this important recommendation has not been fully implemented. Similarly, the NRFII has

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36. Evidence, p.898.
37. Evidence, p.1220.
38. Evidence, p.923.
39. Heavy Vehicle Safety Report, p.104.

repeated this call for uniformity by recommending "that ATAC move to adopt an approach to safety inspection that is consistent in all States, and which involves regular inspection".[40] Many submissions to this Inquiry made similar recommendations.

Random inspections

114. Less than 3 percent of car accidents occur because of vehicle defects,[41] however, a higher proportion of heavy vehicle accidents are attributed to this cause. Heavy vehicles generally travel much greater distances per annum and are subject to heavier wear than private cars and for this reason it is important that heavy vehicles are inspected regularly to ensure that they are in good working condition.

115. The importance of random inspections of heavy vehicles in maintaining high safety standards is acknowledged by all. However not all States and Territories have allocated the resources necessary for extensive random inspections. The perceived risk of a random inspection has to be sufficiently high to dissuade operators from allowing defective vehicles onto the road. All States have the provision for random inspections but in most cases they are not carried out to any significant degree, which of course renders them ineffective. It is thought by some that the enforcing officers may not wish to perform random checks on buses because of the inconvenience that it may cause to the passengers aboard. Weighbridge checking stations it would seem are rarely used as checking spots for buses.[42] Opportunities for random inspections occur at scheduled rest stops, which would not inconvenience passengers.

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40. Heavy Vehicle Safety Report, p.146.
41. Sabey, B.E. and Staughton, G.C., 1975, Interacting Roles of Road Environment, Vehicle and Road User in Accidents, 5th International Conference of International Association for Accident and Traffic Medicine, London, September, 1975.

    Treat, J.R., 1980, "A Study of Pre-crash Factors Involved in Traffic Accidents", HSRI Research Review, Ann Arbor, Michigan, Vol 10. No 6/Vol 11. No 1.

42. Evidence, p.1030.

116. It was recommended in the Heavy Vehicle Safety Report that an annual inspection scheme be supplemented by a system of random checking. The NRFII drew attention to the New South Wales experience in improved vehicle inspection. In 1979 a system was introduced which provided for random heavy vehicle inspections to supplement an annual inspection of vehicles by government approved inspectors. Statistics published by the New South Wales Department of Motor Transport show that initially no fewer than 23 percent of trucks were found to have defects which were classified as major, a figure which dropped to 8 percent in the first six months of the scheme.[43] The improvement in vehicle standards was therefore most substantial.

117. One of the provisions of the Interstate Road Transport Act is that vehicles will be able to be stopped and inspected when there are reasonable grounds to believe that the vehicle contravenes the Act or federal safety standards.[44] The Committee trusts that this will encourage State and Territory authorities to monitor closely the safety standards of coaches travelling within their respective States and Territories.

118. To improve inspection procedures and consequently the safety standards of coaches the Committee recommends that:

> **the Minister for Transport seek through the Australian Transport Advisory Council the development of inspection procedures and requirements, including regular inspections supplemented by an extensive system of random checks, to be implemented in all States and Territories and through the Interstate Road Transport Act 1985.**

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43. NRFII Report, p.146.
44. Section 44.

CHAPTER FOUR

DRIVER SAFETY

Training

119. Passenger coach drivers have a number of responsibilities that must be met in their day-to-day work. They are responsible for the safety of a number of passengers and their arrival on time despite various adverse weather, road or traffic conditions. The driver is responsible for the care of an expensive piece of equipment and minor maintenance together with ticketing and other minor administrative matters. The driver must also know what steps to take in the case of an accident or breakdown. In order to complete these tasks successfully it is clear that special training is desirable and that mere on-the-job experience cannot be expected to quickly provide all of the needed skills or information.

Effectiveness of training courses

120. The effectiveness of driver training in improving driving skills is not clear. Most studies on the relationships between experience and crash rates have concentrated on drivers of passenger cars and results have generally been contrary to the common expectation that experience reduces crash rates.[1] Evaluations of advanced driving skill courses and defensive driving courses have concluded that these types of courses do not decrease the likelihood of motor vehicle crashes.[2] These studies, however, relate to car drivers and we therefore cannot draw similar conclusions about drivers of heavy vehicles. The Federal Office of Road Safety believes that training for professional

1. Evidence, p.21.
2. Boughton, C.J., Budd, R.A. and Quayle, G. Driver Training and Licensing, National Road Safety Symposium, Canberra, 1984.

drivers such as coach drivers may be beneficial.[3] The graduated licensing system is based on the presumption that driving experience enhances driving skills.

121. An Australian study of truck drivers in 1977 failed to show any relationship between age, experience and crash rates.[4] In contrast to this study, one conducted in the USA showed a correlation between the driving experience and crash records of heavy commercial vehicle drivers.[5] The crash records of 13 000 truck drivers and 9 800 bus drivers were examined. The results showed that crash rates of drivers fell abruptly after having one or two years experience with their company.

122. Extended driver training appears to have a place for professional drivers. Some transport companies claim to have reduced collision costs by an average of 40 percent after drivers have attended extended training programs.[6] A major transport company had a substantial reduction in both the number and severity of crashes over a six year period after the introduction of a training program.[7]

123. Although it does appear possible that attendance at training programs does favourably influence driving skills and reduce crash records, the value of courses should be determined through a properly designed evaluative study. If the Human Factors Research Study cited above was correct, then formal training as a substitute for experience for professional drivers, may prove effective. The Committee recommends that:

> **the Federal Office of Road Safety conduct a study on the efficacy of training courses for bus and coach drivers.**

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3. Evidence, p.22.
4. Linklater, D.R., A Profile of Long Distance Truck Drivers, Traffic Accident Research Unit Report 9, 1977, NSW Department of Motor Transport).
5. Human Factors Research Inc., A Study of the Relationships among Fatigue, Hours of Service and Safety of Operations of Truck and Bus Drivers, HFRI, Santa Barbara, 1972.
6. Education, Training and Licensing of Drivers Report, May 1982, para. 128.
7. Education, Training and Licensing of Drivers Report, May 1982, para. 129.

Pre-entry training

124. There is no legal requirement in Australia that coach drivers receive specific training. Rather they must fulfil the requirements, including driving tests, for the appropriate class licence. Usually a driver really begins to learn the trade after obtaining the relevant licence and gaining on-the-job training from the employer.

125. Most drivers receive some form of instruction in the basic control of a passenger coach prior to presenting for a licence test, however, there is no formal pre-entry training requirement. Pre-entry training at present is limited to that offered by some of the individual coach companies, TAFE colleges, and publicly funded driver establishments.

126. Training courses need to ensure that all those entering the industry are adequately equipped with the skills necessary to safely operate buses. These skills include driving, on-the-road repairs and maintenance, passenger welfare, first aid and accident procedures.

127. Some companies provide training and assessment of new drivers. Greyhound, for example, requires each applicant to attend a two-week training course, which covers all aspects of the driver's duties. Ansett-Pioneer conduct a 2 week initial training course for new drivers. Highway driving skills, general vehicle handling, gear changing, clutch control, etc, are taught over 5 days of concentrated training. On at least one occasion, night driving tuition takes place.

128. As a whole, employers in the industry appear reluctant to develop and implement training programs because of the lack of support for the concept of training. As training is not compulsory, those companies that offer training programs are at a cost disadvantage to companies that offer none. Many smaller

companies lack the resources for training. There is little incentive and encouragement, therefore, for companies to provide such programs for their employees.

129. Pre-entry training provided through TAFE colleges gives the opportunity for most potential drivers to have ready access to a training course as TAFE colleges and affiliated study centres are widespread throughout the country. This is the only training alternative that is not centralised. The concept of college based training has already been adopted in Queensland. The Queensland Road Transport Industry Training Committee has developed a bus driver training program and a training manual which can be used by suitably qualified individuals or organisations, such as TAFE colleges and CAE's. The program was initially developed for school bus drivers, but it is intended to extend the program to provide training for a wider section of the bus industry. It is proposed to offer the course throughout the State at times and in places that meet the scheduling requirements of the operators[8].

130. The college based training programs, however, cannot always offer training on an appropriate vehicle. Smaller centres would not have access to a vehicle for training purposes or have the funds to purchase one. College based non-vehicle training can go part of the way in providing necessary information however there must be some question about the value of training programs which offer no practical vehicle training.

131. College based pre-entry training is supported within the industry by the National Road Transport Industry Training Committee. The Road Transport Industry Training Committees are established under the National Training Council and form one of the many networks providing advice on training to Australian Industry. These committees are tripartite, being made up of representatives of:

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8. Evidence, p.868.

(a) employers,
(b) Federal and State Governments, educational and professional bodies, and
(c) unions in the industry.

The primary purpose of the Industry Training Committees is to promote training, develop programs and coordinate the expenditure of the Federal Government on industry training to ensure maximum cost benefit. All the committees are cooperating closely with TAFE colleges in each State to develop pre-entry training. Industry Training Committees are partially funded by the Federal Department of Employment and Industrial Relations.

132. The Federal Department of Transport believes that heavy vehicle drivers "ought to respond positively to training programs"[9] and it is therefore important that adequate funding is provided to the Committees so that effective heavy vehicle training programs can be established. The TWU believes that Governments have not recognised the importance of providing adequate funding to the training area and has called for greater funding support from both Federal and State Governments for bodies such as the Industry Training Committees.[10] This conclusion was also reached by the NRFII. The Committee supports the concept of pre-entry training being offered to drivers through TAFE colleges and recommends that:

> **the Minister for Employment and Industrial Relations and the Minister for Transport, through the Australian Transport Advisory Council, encourage the States to develop pre-licence training programs through TAFE colleges, in consultation with State Industry Training Committees.**

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9. Evidence, p.22.
10. Evidence, p.176.

Post-licence training

133. There are several driver training courses available to licensed bus drivers who seek to expand their driving skills. Many of these courses are the result of the involvement of the State Industry Training Committees (ITC's), which are formed to enable training to be designed to meet the needs of industry at the local level. The courses offered differ from State to State.

134. The situation of the Victorian ITC is different from those of the other States, in that most training is handled through Braybrook TAFE College or through the Driver Education Centre of Australia (DECA) at Shepparton. DECA provides a wide range of programs to upgrade the skills of bus drivers, including Learning to Drive Coaches, Defensive Coach Courses, Instructor Training and Hazardous Conditions Courses. It is compulsory in Victoria for coach drivers to hold a Hazardous Conditions Certificate before driving in snowfields areas in winter.

135. The ITC in NSW conducts snow driving courses twice a year for NSW drivers. The course covers handling a coach in all aspects of snow country driving and is approved by the Bus and Coach Association of NSW and the NSW Department of Motor Transport. Drivers are issued with a certificate on completion of the course. The course is also available to drivers of tour companies in Queensland and a similar course is available in South Australia. These types of courses are vital if the risks associated with coach operations in snow areas are to be minimised. Defensive driving skills and a Coach Captain's Course are also offered in some States.

136. In the Northern Territory the Bus Proprietors Association is active in developing special training courses for bus drivers. The Northern Territory Emergency Services in liaison with the Department of Transport and Works has developed a draft document "Tourist Coach Captains Emergency Procedures Manual"

which will be available to coach operators Australia-wide when completed. It contains information needed in an emergency, particularly one in an isolated location. The aim is to ensure that if an accident occurs, drivers are adequately skilled to handle the situation.[11] In Queensland a defensive driving course is offered by the Road Safety Council. The basis of the course is the study of major road accident causes and suggested driving techniques to avoid accident causing situations.[12]

137. The training programs offered at present appear to be an important means by which drivers may obtain various driving skills, however, the courses available differ from State to State and are not readily accessible to all drivers. Some drivers rely on the training programs that are offered by their company, but in many instances there is no form of post-licence training provided. Companies should be encouraged either to provide refresher courses or to enable drivers to attend courses offered elsewhere. Until a study is carried out on the efficacy of training programs the Committee cannot recommend that post-licence training, other than hazardous conditions training, be compulsory.

First-aid training

138. Research has indicated that between 10 and 12 percent of road accident victims may have survived if they had been given first aid at the scene of the accident.[13] The action of survivors in a bus accident may be of critical importance if a life is to be saved particularly in remote areas. It is therefore worthwhile for drivers to be trained in first-aid and that first aid kits be carried on coaches.

139. In some States and Territories, road traffic legislation requires that any driver who is involved in an accident must render assistance to the injured, although there is no legislation to ensure that drivers have even a basic knowledge of

11. Evidence, pp.680-1.
12. Evidence, p.868.
13. Education, Training and Licensing of Drivers Report, para. 91.

first aid procedures for such an emergency. Effective assistance implies practical knowledge of appropriate first aid measures, which cannot be achieved without some form of training.

140. The potential problem of being sued for providing negligent first aid treatment is a deterrent to those wishing to render aid at an accident. There have been cases in the USA where accident victims have in fact sued a person for providing negligent first aid. However the majority of States in the USA now have a Samaritan Clause in their legislation. The requirements of the clause vary from State to State but the one common factor is that individuals who give aid at the scene of an accident can do so without fear of prosecution. There have been no prosecutions to date against any person giving negligent first aid treatment at the scene of an accident in Australia, although there is no legislation to prevent such action being taken by an accident victim. There was a move in Victoria to issue tow truck drivers with first aid kits but the problem of negligent treatment was raised.[14]

141. The Road Safety Committee's Education Training and Licensing of Drivers (ETLD) Report in 1982 recommended that the States introduce legislation protecting those giving assistance at the scene of an accident from subsequent civil action as a result of that action.

142. The ETLD Report also made recommendations of first aid training courses for drivers and on the carrying of first aid kits on passenger carrying vehicles. To date, there has been no Government response to these recommendations and no subsequent action by the States or Territories.

143. The Committee feels that there would be great value in making it compulsory for all passenger coaches to carry a first aid kit and for all drivers to be trained in first aid procedure. This view was supported by many witnesses.

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14. Evidence, p.185.

144. If bus drivers are to be trained in first aid procedures they should be encouraged to provide treatment when necessary. They should therefore be protected from civil action resulting from rendering assistance. The Committee recommends that:

the Minister for Transport, through the Australian Transport Advisory Council, encourage the States to:

(a) make it compulsory for all passenger coaches to carry first aid kits;

(b) introduce legislation protecting those giving assistance at the scene of an accident from subsequent civil action as a result of that action; and

(c) include first aid training in pre-entry training programs for coach drivers.

Licensing

Licence classification

145. Each State and Territory Government in Australia requires that a valid driver's licence be obtained before a person can drive a vehicle. Residents are required to have a valid licence issued by their own State or Territory Government.

146. Concern was expressed throughout the Inquiry that licensing standards and classifications vary considerably between the States and Territories. Licence classes range in number from 13 in Western Australia to 5 in the Northern Territory. In Victoria there is one class of heavy vehicle licence and 11 categories of endorsement - one for each type of bus operation. Licence categories and requirements are shown at Appendix 3.

147. Evidence was given to the Inquiry that the present variations between States and Territories leads some drivers to hold multiple licences to ensure that they are licensed to drive particular vehicles, even though there is a large degree of reciprocal recognition of out-of-State licences and endorsements.[15] The opportunity for drivers to hold more than one licence is allowing abuse to be made of the licensing system. It enables drivers who have had their licence suspended or cancelled in one State to continue to drive using a licence from a different State. The penalty points sytem now in use in each State forms part of the relevant State's licensing arrangements, thus the effectiveness of the points system is seriously weakened by this practice.

148. In 1982 the Road Safety Committee in its Education, Training and Licensing of Drivers Report recommended that the Australian Transport Advisory Council (ATAC) work towards a uniform licence classification system throughout Australia. In response to this and widespread recognition of the problems associated with the present system of licence classification, ATAC has endorsed a uniform classification for driver's licences to serve as a model for adoption by the States and Territories. The proposed uniform code is outlined in Table 9.

149. The principle that bus driver licences should vary according to the number of passengers which the bus is designed to carry has been endorsed in the uniform code. The principal advantage of a uniform system of driver licensing is the reciprocal recognition by each State and Territory of licences from other jurisdictions. The Committee fully supports such a system.

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15. Evidence, p.19.

TABLE 9

Uniform code for driver's licence classification endorsed by ATAC in 1983

Vehicle Type	Vehicles in the class
Two-wheelers	Moped
	Motorcycle up to and including 260ml engine capacity
	Motorcycle over 260ml engine capacity
Basic	Motor vehicle up to and including 4.5 tonnes gross vehicle mass (gvm) (including passenger vehicle under 4.5 tonnes gvm fitted to carry up to 12 adult passengers)
Rigid truck	Any 2-axle truck over 4.5 tonnes gvm up to and including maximum permissible for such vehicles
	Any other rigid truck
Articulated truck	Any 3-axle articulated truck up to and including maximum permissable gross combination mass (gcm) for such vehicles, or a truck and independently braked trailer combination up to the above gcm
	Any other articulated truck or truck-trailer combination
Road train	Road train as defined in the Road Train Code
Omnibus	Omnibus fitted to carry 13 to 30 adult passengers
	Omnibus fitted to carry over 30 adult passengers
	Any articulated omnibus

Notes:
1. The Australian Transport Advisory Council has endorsed the following recommended vehicle mass limits:
   (i) 2-axle truck: 13.9 tonnes gvm
   (ii) 3-axle articulated truck: 22.4 tonnes gcm.
2. Special endorsement would be required for hire and reward in each omnibus classification.
3. Consideration is being given to sub-dividing the first omnibus category to below and above 5 tonne.

Source: Federal Office of Road Safety, evidence, p. 41.

150. Evidence showed overwhelming support for the uniform licence classification code endorsed by ATAC, with few suggested amendments to the proposed code. The TWU recommend that the code be varied to include an additional classification relating to the passenger bus industry. They recommend a licence Class 11(a) for an omnibus fitted to carry over 30 adult passengers and used on long-distance and interstate express or long-distance tour work.[16]

151. For a uniform bus driver licence system to be successful it is important that there is an exchange of licensing information between jurisdictions. It has been suggested that the licensing records be computerised and recorded on a national network so that cross checks can be made to establish whether another licence is held.[17] This would enable details of traffic offences to be easily recorded regardless of the jurisdiction in which the offence takes place, and would make it possible for a uniform system of penalty points accumulation to be introduced. The Committee believes that such a system is necessary if the points system is to work in the way intended which is to preclude drivers with bad driving records.

Graduated driver's licence

152. The concept of a more structured form of graduated entry of any driver into a higher class of licence is consistent with the basic philosophy of progressive development of attitude, knowledge and skills needed for safe driving. Driving skills are

16. Evidence, p.141.
17. NRFII Report, p.163.

likely to be enhanced by experience and therefore it would be appropriate to restrict bus licences to drivers who have had some experience driving lighter vehicles before proceeding to a higher licence level.

153. The ATAC endorsed code for uniform driver licensing requires that drivers hold a basic licence for at least twelve months before being eligible to apply for a truck licence. The concept of a graduated licence system was supported in the Education Training and Licensing of Drivers Report in 1982 and it is supported again in this Report. Although there is not at present a safety problem involving bus drivers many potential driver skill problems would be minimised if the graduated licence proposal was extended to include bus drivers. There was widespread support from witnesses for a graduated licensing scheme to be introduced for bus licences, with appropriate experience being required before obtaining an advanced licence. The training referred to earlier in paragraphs 120, 123 and 126 of this Report could perhaps be accepted in place of experience, if shown to be effective. The Federal Office of Road Safety has suggested that the qualifications for each bus licence class might be:

- 13-30 passengers and less than 5 tonne gross vehicle mass (gvm) - 1 year with basic driver's licence
- over 30 passengers and over 5 tonne gvm - 1 year with 13-30 passenger licence or heavy truck licence
- articulated bus - 1 year with 13-30 passengers licence or heavy truck licence[18]

The Committee recommends that:

the Minister for Transport seek the cooperation of the Australian Transport Advisory Council to extend the graduated licence proposal to include bus drivers.

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18. Evidence, p.19.

Driver tests

154. Licence testing procedures for bus drivers are generally seen as being inconsistent and often inadequate. Standards not only vary from State to State, but they also vary within States. Tests conducted in metropolitan areas may vary considerably to country areas. The Committee was informed that work is proceeding with State licensing authorities on uniform licence testing requirements.[19] Meanwhile, ATAC has endorsed the greater involvement of industry in developing their own test standards. The New South Wales Road Transport Industry Training Committee encourages bus companies to undertake additional, more stringent testing of any prospective employees.[20] A scheme presently being considered for testing arrangements is based on one in Canada in which fleet operators, directed by Government guidelines, warrant the competence of their employees. Responsibility for testing other applicants, for general licence issue and for re-tests would remain with the licensing authority. This scheme recognises the potential for self-regulation and for less government involvement.

155. Testing of drivers for bus licences involves tests of theory and practice being passed, but not necessarily on a vehicle that is properly representative of the licence category.[21] In certain cases, particularly in some country areas, it would be difficult for a suitable vehicle to be available for drivers to be tested on. However, it is important to ensure that a suitable vehicle is used. It is difficult to understand how a person can be acknowledged, by being granted a licence, as having the necessary skills to drive a bus carrying many passengers, without actually having been tested on that type of vehicle.

156. It is important that tests for bus driving licences be conducted by suitably qualified examiners who hold a licence which is at least equivalent to that being tested. The examiner

19. Evidence, p.20.
20. ETLD Report, para.188.
21. Evidence, p.19.

must be able to recognise the skills and skill deficits of the applicant. It may restrict the locations where tests can be taken because of the unavailability of a suitably qualified examiner, but the inconvenience this may cause to some does not outweigh the importance of appropriate driver testing.

157. Many witnesses called for regular re-testing of bus drivers to ensure that their driving skills or their physical condition has not deteriorated such that they should no longer hold a licence. The TWU, however, believes that they should be held at least every 12 months.[22] This would seem quite excessive, however, and difficulties would be likely to arise in the availability of manpower and resources necessary to carry out such a testing program. It is felt that re-testing should take place at least every three years,[23] which is in line with the frequency of re-testing as recommended by the NRFII.

158. In regard to tests for bus driving licences the Committee recommends that:

- **the Minister for Transport, through the Australian Transport Advisory Council, seek the cooperation of the States and Territories in implementing uniform tests for bus driving licences; these tests would be performed using a vehicle that is representative of the licence category and would be conducted by qualified examiners holding at least an equivalent licence.**

- **the Minister for Transport, through the Australian Transport Advisory Council, encourage the States and Territories to conduct bus licence re-testing every three years for bus drivers.**

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22. Evidence, p.142.
23. Evidence, p.1160.

Caravan towing

159. When discussing the safety of long-distance coach travel there have been issues raised which are not specifically within the Terms of Reference of the Inquiry but which do, however, deserve consideration in this report. One of these issues is caravan towing.

160. Much criticism was heard of the hazards caused to bus drivers by drivers towing caravans. This criticism largely related to poor overtaking skills and a general lack of control of caravan movement on the road. Some witnesses suggested that drivers towing caravans should be required to have a separate licence.[24] The question of having a separate test for those who tow caravans was raised in the ETLD Inquiry in 1982 which concluded that there was not sufficient evidence at the time to justify compulsory testing and licensing.[25] Although the problems caused by caravans on the road were recognised, it was felt that public education campaigns aimed at drivers who tow caravans could be more effective than changes in the licensing system. However there does not appear to have been any concerted effort in conducting such education campaigns and their effectiveness is therefore doubtful.

161. The NRFII also heard widespread criticism from truck drivers of drivers towing caravans. It is alleged these drivers are still causing hazards on the road, not only to bus and truck drivers but to drivers of motor cars as well. In view of the almost universal nature of the complaints received by the NRFII it was recommended that separate licensing tests be required for drivers before they are allowed to tow a caravan.[26]

162. During this Inquiry bus drivers pointed out that some caravans were quite heavy and long, yet no special licence is required to tow them. This is inconsistent with the notion of

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24. Evidence, p.836.
25. ETLD Report, para 250.
26. NRFII Report, p.151.

graduated licences. The Committee supports the introduction of a separate licensing test and endorsement to improve the knowledge and driving skills of those drivers towing caravans above a certain weight and length limit and thus pose less of a hazard to other road users. The Committee recommends that:

> **the Minister for Transport seek the cooperation of the States and Territories in examining the feasibility of a special licensing test and endorsement for drivers towing caravans beyond a small size.**

Speed limits

163. Speed limits for buses, as for all heavy vehicles, generally are set lower than the speed limit for cars. There is no uniform general speed limit applying throughout Australia and, therefore, no uniform speed limits for heavy vehicles. The National Road Traffic Code provides a general speed limit of 110kph outside built-up areas (90 kph for buses) and 60kph in urban areas. However, States and Territories are free to adopt their own limits within this general range, according to individual circumstances. The limits apply in three States with slight variations in the other States and Territories. Not only is there a variation in limits generally but also a difference between bus limits between States and a difference between coaches and trucks. The speed limit variations are showed in Table 10 below.

Table 10
Non-urban speed limits for vehicles
(km per hour)

State/Territory	General Limit	Coach Limit	Truck Limit
New South Wales	100	90	80
Victoria	100	80	80
Queensland	100	100	90-100
Western Australia	110	90	80-90
South Australia	110	90	80
Tasmania	110	90	80
Northern Territory		No absolute limit	
Australian Capital Territory	As directed	As directed	80

Note: Since ATAC endorsed these limits in the National Road Traffic Code in 1982, there have been developments which lend support to proposals for a review of those limits, particularly in regard to the removal of the speed differentials.

Source: Australian Long Distance Coach Industry Review, Bureau of Transport Economics, p.66, and communications with State/Territory authorities.

Speed differentials

164. The Federal Office of Road Safety told the Inquiry that "the single greatest problem in relation to speed in Australia is not so much absolute speed but speed dispersion".[27] This problem is in relation to all road vehicles in the traffic stream and was discussed in the Road Safety Committee's 1984 Report on Road Safety Generally. The Report concluded that "rather than the maximum speed it seems to be the variability of speeds within a traffic stream that is a significant determinant of the likelihood of a collision".[28]

165. The speed limit differential was initially thought necessary to facilitate overtaking opportunities for passenger cars and to take account of the different braking capabilities of cars and heavy vehicles.

27. Evidence, p.67.
28. Road Safety Generally Report, p.33.

166. A recent study on the safety aspects of increased speed limits for heavy commercial vehicles was carried out in Victoria in 1978 by the Road Safety and Traffic Authority. The study compared the braking standard for passenger cars and commercial goods vehicles, noting the different deceleration requirements, and concluded that "a speed limit differential was desirable to achieve balanced braking" between the two classes of vehicles.[29] The study then attempted to establish appropriate speed limit differentials so that cars and heavy vehicles would have approximately equal stopping distances. However, the process by which the speed limit differentials were estimated has been criticised. The most recent study on heavy vehicle speed limits, undertaken by the Department of Transport, argues that they were based only on the different deceleration requirements and did not take into account the improved sight distances available to heavy vehicle drivers.[30] This Study claims that the greater sight distance of heavy vehicle drivers, including bus drivers, more than compensates for their longer stopping distance. The driver is able to see over all cars, vans and small trucks, allowing him to observe both the vehicles and the road ahead of cars being followed.[31]

167. A possible road safety benefit of equal stopping distances would be a reduction in rear-end crashes involving vehicles travelling in the same direction. However, the relatively small incidence of rear-end collisions involving buses compared to other types of accidents indicates that such crashes are not a major problem.

168. In the past there has been considerable uncertainty about the performance and reliability of heavy vehicle brakes, however braking performance of buses and trucks is now specified in the design rules, which has led to generally satisfactory performance. Heavy vehicle braking performance standards are also under review at present with a view to their further improvement.

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29. Federal Office of Road Safety, Heavy Vehicle Speed Limits, 1985, p2.
30. Heavy Vehicle Speed Limits, p.2.
31. Heavy Vehicle Speed Limits, pp.9-14.

169. *Arguments for the retention of the speed limit* differential often centre on the view that lower bus and truck speeds should be maintained so as to minimise the severity of collisions between cars and heavy vehicles. This concern is understandable, but it is also felt that in this context the principal objective should be crash avoidance and not injury minimisation. There is no doubt that the higher the speed of vehicles involved in a car-bus collision, the more severe the impact and the more likely that the occupants of the car will suffer serious injury or death. It is argued, however, that an increase in heavy vehicle speed limits from those applying at present, although resulting in greater impact with a car in a collision, would not change the outcome in human terms. If the objective is to reduce the severity of crashes involving heavy vehicles to a stage where car occupants could survive, then consideration would have to be given to speed limitations which would be unacceptable.[32]

170. There is wide support amongst road safety authorities for the argument that a traffic stream with vehicles travelling at different speeds is potentially more dangerous than one in which vehicles are all travelling at a similar speed, even if the common speed is relatively high. This is visible on the road where the main body of traffic attempts to pass a slow driver. "A high level of speed dispersion results in more frequent conflict between vehicles."[33]

171. There was overall support from witnesses for an increase in the speed limit applying to buses. Most witnesses endorsed the limits recommended for trucks by the NRFII; that a 100kph speed limit be applied outside built-up areas for those which comply with the latest braking design rules and that those which do not comply be restricted to 80kph. Those vehicles in the latter

32. Heavy Vehicle Speed Limits, p.3.
33. Heavy Vehicle Speed Limits, p.3.

category would be required to carry a placard to that effect.[34] Some witnesses, however, argued that all heavy vehicles should be permitted to travel at the same speed as cars.[35] It is maintained that there is no justification on safety grounds for heavy vehicle speed limits to be set lower than the general speed limit and that the proposal to placard vehicles to notify non-compliance with braking standards should not proceed because:

- it would create a special category of speed dispersion among heavy vehicles, which in turn would lead to hazardous situations in the traffic stream

- government resources needed to regulate and enforce this proposal would be immense

- initial compliance with braking design standards does not ensure that vehicles continue to comply in service

- most heavy vehicles in service have braking performances already comparable to the design rules in terms of stopping distances and virtually all could be brought up to that standard.[36]

172. It is widely acknowledged that most heavy vehicles, including buses, already disregard the differential speed limit, therefore a substantial change in speed is not likely if the speed limit is increased. Two national free-speed surveys were conducted in 1978 and 1983. The surveys support the view that speed limits do not influence free-speeds significantly, particularly where speed limits are regarded as unreasonable. Where speed limits are set too low many drivers will often ignore

34. NRFII Report, p.144.
35. Evidence, p.31.
36. Heavy Vehicle Speed Limits, 1985, p.6.

them altogether and travel at speeds which they consider suit the prevailing conditions.[37] The 1983 speed survey (see Appendix 4) indicates that truck drivers regard 80kph as an unreasonably low limit. The Western Australian Police Department has also undertaken speed surveys of motor vehicles travelling on two country highways in that State. The results of free-speed observations of buses in the surveys are recorded in Table 11. These surveys show that many bus drivers are also ignoring present speed limits.

173. On the basis of past experience the most likely result of increasing the heavy vehicle speed limit is an increase in the speed of many of these vehicles presently operating at or about the current limit and a decrease in the speed of many vehicles presently operating in excess of the general speed limit. The effect would be a reduction in dispersion of truck and bus speeds and a reduction in speed dispersion overall.

TABLE 11
Observations of Free Bus Speeds on Two Country Highways in Western Australia

Location	No. Buses Observed	Speed Limit	Buses Exceeding: 90km/h	95km/h	100km/h	110km/h
Eyre Highway	52	90km/h	94%	83%	60%	23%
Brand Highway	55	90km/h	58%	24%	9%	

Notes:

1. Unobtrusive observations were made over a 24 hour period by two Police Officers in five surveys on the Eyre Highway and four surveys on the Brand Highway.
2. The Eyre Highway is a remote country highway stretching over 720 kilometres in the south east part of the State and vehicle use is estimated at less than 300 vehicles per day. Most buses observed were tourist coaches.
3. The Brand Highway is a country highway of 366 kilometres situated north east of Perth and with a traffic flow of approximately 700-1500 vehicles per day.

Source: W.A. Government, evidence, p.485.

37. Heavy Vehicle Speed Limits, p.27.

174. The Interstate Road Transport Act, part of the package of fast-track reforms initiated by the Federal Government, requires legislative reforms by State governments before the Federal legislation comes into force. One of the initiatives required to be taken by the States is the removal of the speed limit differential between trucks and buses and other vehicles outside built-up areas. The States have not as yet introduced this reform.

175. The Committee recommends that:

the Minister for Transport, through the Australian Transport Advisory Council, seek the cooperation of the States in increasing the speed limit for buses to the general speed limit as specified in the fast-track package.

Enforcement

176. As well as indicating that speed limits may be too low, the extent of non-compliance with the speed limit suggests that bus speeds are not being enforced or that enforcement practices are ineffective. There are, however, problems associated with enforcement practices and procedures. Concern is often expressed for example, about the appropriate allocation of enforcement resources. There is often a tendency for police to concentrate their enforcement effort on the safest roads, such as freeways, and not on places where crash rates are higher.[38] Where speed limits are enforced on those parts of the national highway system which are built to design-speeds in excess of existing posted limits, disrespect for traffic law in general is likely to result.

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38. Heavy Vehicle Speed Limits, p.27.

177. In a recent Australian review of enforcement, no conclusive evidence was found that enforcement will improve safety.[39] The most effective means of enforcement in terms of inducing compliance is seen to be the visible presence of police, with the most effective enforcement symbol being a marked police vehicle. The same conclusion was reached by a major American study.[40] This type of enforcement however, although increasing compliance in the short-term and in the immediate area, is not a practicable means of reducing speeds over large areas. Resources dictate that a sufficiently high visibility of enforcement officers on the road is neither practical nor indeed possible.

Timetabling

178. It would appear that the processes by which timetables are approved in the different States are varied and sometimes inadequate. For instance, before a timetable can be published in South Australia or before it can come into operation, approval has to be given by the authorities.[41] In Western Australia, however, no government agency checks to see whether bus timetables can be achieved legally.[42]

179. It is important that timetables drawn up by bus companies are such that they can be met without breaking speed limits and driving hour regulations, and without jeopardising the safety of passengers. Official timetables must not require a driver to exceed the speed limit to maintain the schedule. Witnesses claimed that there are instances where there is timetabling pressure placed upon drivers, which in turn forces them to break the speed limit.[43] Owners and operators who publish timetables which can only be met by breaking speed limits, thus putting pressure on drivers, should be penalised.

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39. Armour, M., A Review of the Literature on Police Traffic Law Enforcement, Australian Road Research Board, March 1984.
40. U.S. Transportation Research Board, A Decade of Experience, National Research Council, Washington, 1984.
41. Evidence, p.598.
42. Evidence, p.497.
43. Evidence, pp.552-3.

TABLE 12
Timetables - Sample of Long Distance Journeys

Company	Journey	Estimated Distance (km)	Average Duration (hours)	Estimated Stops (hours)	Estimated Average Speed (km/h)	Bus Speed Limit (km/h)
Ansett-Pioneer	Port Hedland to Perth	1800	24	4.9	94.2	90
	Alice Springs to Darwin	1520	20.7	3.8	89.9	Nil
	Adelaide to Sydney (via Canberra)	1550	24	4.9	81.2	90 - SA 80 - VIC 90 - NSW
Greyhound Express	Brisbane to Darwin	3600	48.2	6.6	86.5	100 - QLD Nil - NT
	Sydney to Melbourne (5 Star) (via Canberra)	1040	13	2.0	94.6	90 - NSW 80 - VIC
	Adelaide to Perth	2815	35	5.2	94.5	90 - SA 90 - WA
Deluxe Coachlines	Brisbane to Sydney	1020	17.3	4.8	81.6	100 - QLD 90 - NSW
	Melbourne to Sydney direct	977	13.0	2.5	93.1	90 - NSW 80 - VIC
	Perth to Adelaide	2815	34.8	5.8	97.1	90 - WA 90 - SA
Olympic East-West Express	Perth to Adelaide	2815	36.8	6.5	92.9	90 - WA 90 - SA
	Adelaide to Melbourne	800	9.3	0.9	95.2	90 - SA 80 - VIC
	Brisbane to Melbourne (via Warwick)	1811	24.5	3.3	85.4	100 - QLD 90 - NSW 80 - VIC
McCafferty	Sydney to Brisbane (via Pacific Hwy)	1020	15.8	4.5	90.3	90 - NSW 100 - QLD

Note: This table is based on company timetables effective 1 July 1984, scheduled rest periods and 5 minutes at each pick up point, and assumes that schedules are met.

Source: Federal Office of Road Safety, evidence, p.30.

180. Table 12 shows details of a sample of timetables for five of the larger coach companies. The sample shows that there are instances where the average speed of interstate coaches are above the State bus speed limits. Some of the companies mentioned challenged the basis of the calculations saying that journey distances and the estimated stopping times at pick-up points were incorrect. It should be possible, however, for timetables to be accurately examined in order to ascertain whether in fact some companies are running services which can only be operated by breaking speed limits.

181. The Committee recommends that:

the Minister for Transport, through the Australian Transport Advisory Council, encourage the States to implement approval procedures for bus timetables, prior to publication, ensuring compliance with regulations on speed limits and driving hours.

182. The Committee also recommends that:

the Minister for Transport introduce regulations making it a condition of interstate operator licensing that operators and drivers observe relevant road laws.

Driver fatigue

183. Although there have been a number of studies on the subject of driver fatigue, the relationships between hours of work, fatigue, driving performance and accident rate are not sufficiently clear.

184. There has been only one study on this subject carried out on heavy vehicles in Australia. This was, however, concerned only with truck drivers and therefore the conclusions reached cannot be applied fully to long distance bus driving because the working conditions in the two industries are quite different.[44] Long distance truck drivers remain without direct contact with other people for hours, whereas bus drivers are in permanent contact with travellers. Truck drivers are exposed to more difficult driving conditions than bus drivers, such as exhaust gases, shock and vibration, noise, and the content of their cargo, such as the carriage of dangerous goods. In addition to driving, a truck driver performs additional duties including the loading and unloading of the vehicle.

185. Studies on driver fatigue have produced varying results. Many investigators conclude that extended driving causes reductions in driver psychophysiological arousal which in turn causes degradation in driver performance capabilities. A study undertaken in Switzerland showed increases in performance errors and decreases in the level of physiological arousal as early as the fourth hour of driving and generally further impairment in the remainder of the work shift, except for a "recovery" effect that sometimes occurs near the end of the run. It was also concluded that the frequency of accidents increases after about 7 hours of driving.[45] The United States Bureau of Motor Carrier Safety has published summaries of heavy vehicle crashes which show that over one-third of coach crashes were mainly the result of the driver being asleep or inattentive.[46] Other investigations have found, however, that extended driving has no apparent effect on the response performance of drivers, while still other investigators have shown that extended driving can cause apparent improvements in driver performance.[47]

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44. Evidence, p.25.
45. International Labor Office. Occupational Safety and Health in Road Transport. Inland Transport Committee, 11th Session, Geneva, 1985, pp.21-22.
46. Evidence, p.25.
47. William H. Muto, "The Effect of Repeated Emergency Response Trials on Performance During Extended - Duration Simulated Driving", Human Factors, 24(6), 1982, pp.693-698.

186. A major study on fatigue[48] concluded that accident data for bus drivers showed no effect of driving time on crash frequency. It also showed that the effectiveness of rest breaks on driver performance varied with the elapsed driving time. The first rest break, typically after about 3 hours on the road, generally produced evidence of both physiological recovery and reduced driver errors immediately following the break. The second rest break, typically after about 6 hours, produces less certain evidence of recovery in the physiological indices and failed to arrest an increasing trend in driver errors. For drivers taking a third rest break, after about 9 hours, there was not only no recovery but a further decline in physchophysiological arousal following the break.

187. The study showed that the adverse effects of prolonged driving were evidently more pronounced for older drivers (aged over 45) than for younger drivers. The older drivers generally showed an earlier decline in arousal and had proportionately more of their accidents after 5 hours on the road than did the younger drivers, who on the other hand had the higher absolute accident rate.[49]

188. The same study showed that truck drivers operating the two-up system appear to recover less completely from rest breaks than staged drivers. Physiological recovery following the first break was less certain than for staged drivers; however, performance appeared to improve notably. Following the second break the physiological indices reflected a continuing decrease in arousal with performance errors showed an increasing trend. These findings were supported by a follow-up study.[50]

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48. Harris, William and Mackie, Robert R. and others, A Study of the Relationships Among Fatigue, Hours of Service, and Safety of Operations of Truck and Bus Drivers, Human Factors Research Inc., Washington, 1972.
49. Harris and Mackie, 1972, p.x.
50. Mackie, Robert R. and Miller, James C., Effects of Hours of Service Regularity of Schedules, and Cargo Loading on Truck and Bus Driver Fatigue. Human Factors Research Inc., Washington, 1978.

189. The major findings of studies on driver fatigue which are relevant to the coach industry are:

- the performance of bus drivers becomes poorer after about 4 hours at the wheel
- a driver's performance is at its worst during the early morning hours just preceding dawn
- disturbance of sleep habits over several days has a cumulative effect
- the body takes at least 4 to 6 days to adapt to a change of shifts
- fatigue is more likely to accrue from irregular working than from a stable pattern of either day or night work
- driving at night without a period of adaptation to a night shift is likely to be less safe
- rest breaks become progressively less effective as trip time increases
- two-up drivers appear to recover less completely from rest breaks than staged drivers
- environmental factors, such as heat, ventilation, noise and vibration, contribute to fatigue.

190. From studies on the subject the most commonly given suggestions for preventing driver fatigue are:

- sound medical fitness of driver
- good sleep before duty
- effective training and licensing procedures
- regular driving schedules
- adequate recovery and off-duty time
- roadworthy vehicle - comfortable, good running order.

191. While regulations can provide for rest breaks of a certain period a most important variable in relieving fatigue is the quality of the rest taken, particularly sleep. There is unfortunately no way of ensuring this and the utilisation of rest must of necessity be the responsibility of the driver concerned.

192. Most of the concern expressed by witnesses about fatigue resulting in poor driver performance and thus lower safety standards, was in relation to drivers working under the two-up system. Two-up driving will be dealt with further in the next section.

193. Most studies of driver fatigue would appear to support proposals for shorter driving hours for heavy vehicle drivers, particularly truck drivers, however the evidence in relation to coach driver fatigue is not as convincing.

194. The New South Wales Government told the Committee that *driver fatigue is not a recognised problem area and that it is* therefore not considered a priority in terms of allocating research resources.[51] However, coach travel is growing and its continuing safety should be assured. It is preferable that some monitoring take place in Australia of driver fatigue including that of two-up driving. The study need not be a major one but should establish whether Australian conditions are comparable with those overseas with a view to minimising the deleterious effects of fatigue.

195. The Committee therefore recommends that:

the Federal Office of Road Safety undertake a study of the relationship between driving hours, fatigue and safety in the passenger coach industry.

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51. Evidence, p.1121.

Driving hours

196. In July 1964 ATAC agreed that all States should adopt uniform rules such that the working period for drivers of heavy commercial vehicles would not exceed 12 hours in any 24 consecutive hours and with at least one rest period of 24 consecutive hours in a seven day week, or two such rest periods in a 14 day work period.[52] These guidelines have been adopted by all States and Territories except Tasmania and the ACT, where it is claimed such regulations would not be necessary. Driving hour regulations are, however, not uniform across Australia. Table 13 sets out the various working hours permitted. The regulations covering hours of driving set maximum periods for hours of driving without rest breaks and also stipulate minimum periods of rest. In terms of each driving period over 24 hours, the maximum driving time is 12 hours in NSW, Victoria, South Australia and the Northern Territory, and 11 hours in Western Australian and Queensland. The regulations in NSW, Victoria and South Australia also require a driver to have a minimum of 5 consecutive hours of rest in a given 24 hour period; in Queensland, Western Australia and the Northern Territory the requirement is for 10 consecutive hours of rest in a 24 hour period.

197. Some States have driving hours governed by legislation, otherwise they are laid down in various awards and regulations. Driving hour restrictions provided in industrial awards are not binding on all operators, as not all are respondents to the awards. This highlights the importance of covering basic road safety measures, such as driving hours, by legislation. This particularly relates to companies operating the two-up system of driving (two-up driving will be dealt with later in this Chapter). Federal awards cover coach drivers in all States and Territories except NSW where a State award applies.

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52. Evidence, p.22.

TABLE 13

Hours of Driving
Australian States and Territories

	NSW	VIC	QLD	WA[a]	SA	TAS	NT[a]	ACT
Class of Vehicle (tonnes)	2	2	4.1	b	4.5	-	3	-
Max. Continuous Period (hours)	5	5	5.5	5.5	5	-	5	-
Max. Aggregate in past 24 hours	12	12	11[b]	11[c]	12	-	12	-
Min. consecutive hrs rest in past 24 hours	5	5	10	d	5	-	10	-
Min. 24 consecutive hours for rest in past 7 days	1	1	1	-	1	-	1	-
OR								
Min. 24 consecutive hours for rest in past 24 days	2	2	-	-	2	-	-	-
Min. period between continuous driving period (hours) (for rest and refreshment)	.5	.5	.5	.5	.5	-	.5	-
Log Books to be carried?	Yes	Yes	Yes	Not Specified	Yes	Nil	Nil	-

Notes: a. Legislation not enforced
b. Refers to commercial goods vehicle - no mass specification
c. From midnight
d. 9 or 10 in 24, then 12 in next 24.

Source: *Federal Office of Road Safety, evidence, p.42.*

198. The main Federal award is the Transport Workers (Passenger Vehicles) Award 1978. The Award states that an employee shall not be required to commence work until he or she has had a clear break of 10 hours off duty after completing the days work or shift. The 1984 variation of this Award explicitly restricts the hours of work for drivers of long distance coaches. The Award provides that drivers cannot drive:

(a) more than 5.5 hours without a half hour rest;
(b) if during the preceding 24 hours, the driver has driven more than 12 hours;
(c) unless the driver has had at least 10 consecutive hours away from the vehicle in the preceding 24 hours; and

(d) unless the driver has had 24 hours rest or a period of 24 consecutive hours rest in the preceding 7 days.[53]

The other Federal award is the Transport Workers (Passenger Vehicles Two-Person Operations) Award 1984, which specifically relates to two-up operations. The NSW Award is the Transport Industry - Tourist and Service Coach Drivers (State) Award.

199. The Committee believes that driving hours and rest periods for drivers of long-distance and interstate express road passenger vehicles, should be uniform throughout Australia so that the same conditions govern all operators in the industry.

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53. Evidence, p.23

200. The Committee recommends that:

the Minister for Transport introduce regulations under the Interstate Road Transport Act 1985 covering driving hours so that they are uniform across Australia and applicable to all operators and companies.

201. United States and European regulations, as well as International Labor Office recommendations, provide for shorter driving hours than are currently permitted in Australia. However, one cannot conclude from this that shorter driving hours should be introduced in Australia. It is difficult to compare driving conditions in different countries. Although distances are similar in the US for example, other factors such as road conditions, weather and heavy vehicle oriented facilities are quite different, as are traffic conditions.[54]

202. The Committee believes that shorter working and driving hour regulations could place financial and organisational strains on the coach industry, with no clearly evident likelihood of a reduction in accident statistics.

Enforcement

203. There was general agreement by witnesses that the present restrictions on driving hours are adequate and offer a reasonable standard of safety, provided that they are properly enforced. However, it was also widely acknowledged that many drivers are presently exceeding limits on driving hours, and that the major enforcement tool for monitoring driving hours, the log book, is largely falsified. Log books would appear to be inadequately enforced as blitzes have revealed numbers of drivers without them.

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54. Evidence, p.24.

204. It was claimed that some operators, when facing financial difficulties, extend the hours that their drivers are required to work so that they need not employ the extra drivers needed to observe driving hour regulations.[55] Several drivers told the Committee of instances where they were forced to drive well beyond the driving hour limits. One driver said that on one trip he drove from Brisbane to Kempsey and back again, with a break in the middle, which is a total of about 17 hours;[56] another driver was forced to drive from Brisbane to Gosford as there were no relief drivers to take over from him at the scheduled change-over stops.[57]

205. As a record of drivers' hours, the log book system is ineffective. It is demonstrably easy to avoid or falsify and has brought the whole question of standards and enforcement into disrepute in the eyes of all sectors of the industry. It has become apparent that a number of long distance drivers carry more than one log book and tend to falsify their driving hours to comply with the regulations.[58] The alternative preferred and almost unanimously supported by all witnesses is the tachograph. This, in conjunction with the operator licensing scheme recommended in the NRFII and introduced under legislation in the Interstate Road Transport Act 1985, should result in stricter adherence to driving hour regulations. Under the new system of operator licensing, operators whose buses frequently exceed driving hour limits will be able to be penalised by having their licences suspended or revoked.

206. One of the benefits of tachographs over the log-book system is that they are less susceptible to effective tampering. Any instrument can be tampered with by a driver who is determined to falsify records. The advantage of the tachograph, however, is that chart analysis can detect any misuse of the instrument.

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55. Evidence, p.232.
56. Evidence, p.963.
57. Evidence, p.954.
58. Evidence, p.874.

There are up to seven seals between the gear box and instrument head, seals which if broken can be detected from inspection. Once access is gained to the tachograph by the use of a key, there are a variety of mechanical ways by which low readings can be registered, however they are obvious and easily detected.[59] One witness had doubts about the ease of detection of tampering with the tachograph if calibrations are altered.[60] The tachograph can record the following:

- start of work and trip
- end of work and trip
- driving and stopped times
- number of stops per trip
- distances travelled by trip, day or week
- part distances travelled
- road and engine speeds
- driver changes

The two principles of operation are mechanical and electronic. There are three methods of chart analysis: a visual analysis; use of a mechanical analyser with magnifier and illumination; and the use of data processing software to automatically analyse recorded data.[61] The sophisticated electronic versions record data by a monitor in a special memory cartridge which is then transferred directly to a microcomputer for analysis. At the end of a shift or week's operation, the driver removes the cartridge from the monitor and it is then printed out on the company's computer.

207. Many coach operators already have tachographs fitted to their vehicles. For example, Ansett Pioneer advised that it has tachographs on all express vehicles. The information is recorded on cards, which has created heavy administrative work in perusing the records.[62] All Greyhound long distance coaches are fitted with 7 day tachographs.[63]

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59. R. Travers Morgan Pty Ltd, Appraisal of distance-weight measuring devices for commercial vehicles, June 1984, p.14.
60. Evidence, pp.1230-1.
61. R. Travers Morgan, p.5.
62. Evidence, pp.241-3.
63. Evidence, p.993.

208. It has been estimated that installation costs for tachographs in Australia would be about $950-$1150 per unit; maintenance costs would be $95-$120 per annum.[64] This cost factor appears to be a disincentive for companies to install tachographs to their vehicles. However, the benefits from improved vehicle performance and improved fleet management should more than off-set the initial capital costs and maintenance costs.

209. For the tachograph system to be an effective safety monitor of the long distance coach industry, it is essential that all vehicles be fitted with these devices. New vehicles could be manufactured with tachographs installed, however for vehicles on the road without tachographs, a retrospective fitting program would be necessary. The retrofit program would need to be spread over a certain period of time, with a specified date by which all vehicles must comply.

210. There was some concern raised that tachographs would be used as a basis for prosecutions in relation to speeding offences. There has been numerous cases in EEC countries, particularly West Germany, where retrospective prosecution has resulted from later analysis of the charts.

211. As an enforcement system tachographs should provide adequate control over driving hour regulations, provided that the devices are regularly monitored by the authorities. The most effective way of ensuring the effectiveness of the tachographs is a system of random inspections of records. The importance of random inspections has already been discussed in Chapter Three. There would also need to be regular inspections of the tachograph equipment itself to ensure it is working accurately.

212. The NRFII concluded that tachographs are not intended to be used to detect and punish specific violations of safety regulations but that they should be used to assist operators, and

64. R. Travers Morgan, pp.61-3.

the operator licensing authority, to ensure that relevant safety regulations are generally observed. The Inquiry recommended that regulatory authorities be prohibited from using the periodical inspection of tachograph records to prosecute for individual traffic offences, but that the records should be available to courts of law considering culpability in traffic accidents or specific charges relating to alleged traffic law breaches.[65]

213. The TWU supports the introduction of tachographs for the purpose of assisting driver and vehicle performance but expressed reservations to the Committee about using the devices for prosecuting drivers.[66] However, the Committee feels that drivers should be obliged to abide by the law on safety related matters and that tachographs could provide an effective way of facilitating observance of such regulations.

214. Regulations in the UK state that every tachograph installed in a vehicle must be inspected at least every two years and recalibrated at least at six yearly intervals. Inspections are carried out by commercially operated tachograph centres.[67]

215. The Interstate Road Transport Act 1985 makes provision for "monitoring devices." It enables regulations to be made to require vehicles used in interstate trade to be fitted with such a device and requires that such devices be properly maintained. It will be an offence to damage or alter the recordings of such a device. The stricter controls on drivers' hours and vehicle speeds which the tachograph can provide should improve driver standards and consequently improve traffic safety. It would also assist in achieving the most economical and efficient operation of the vehicle.

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65. NRFII Report, p.171.
66. Evidence, p.189.
67. R. Travers Morgan, p.44.

216. The Committee recommends that:

the Minister for Transport implement regulations under the Interstate Road Transport Act 1985 to require tachographs to be fitted to all long-distance interstate coaches and that tachograph records be used for the enforcement of speed and driving hour regulations.

Two-up Driving

217. There are generally two systems of driving operations used by operators engaged in interstate express services in Australia. The most common system is 'staged driving'. Drivers change over at various staging locations along the route, where accomodation is provided, to ensure that they are rested to at least the level required by the driving hour regulations. The other method of operation uses what is referred to as the 'two-up' system, under which there are two drivers on board at any one time. While one is driving, the other is able to rest in a sleeping area provided at the back of the bus. This enables the drivers to operate in shifts during the journey and so conform to the regulations without drivers needing to leave the vehicle for their rest break.

218. Two-up driving is not allowed in Queensland under State legislation, which requires that drivers spend a certain amount of time away from the vehicle after a driving period. Legislation in Western Australia also enables two-up driving to be prohibited. An amendment passed to the Transport Act of W.A. is designed to give "the Commissioner of Transport the discretionary authority to require operators of long distance coaches to station their drivers at strategic points along the bus route, where such action was deemed to be in the public interst". The discretion provided has never been used, however, as the Minister has not had sufficient evidence to show that two-up has been dangerous.[68]

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68. Evidence, p.667.

219. Most operators employ the staged driving system, in accordance with driving hours restrictions specified in the Transport Workers (Passenger Vehicles) Award 1984. The TWU strongly advocated the staged driving system to the exclusion of two-up driving except for services operated in the outback. The latter operations are covered by the Transport Workers (Passenger Vehicles Two-Person Operations) Award 1984. The TWU position cited is that of the Federal Office. In South Australia opposition to the use of two-up driving was not so strong and in the Northern Territory the Union supported two-up driving.

220. Some companies operate solely under the two-up system, except in Queensland where the practice is not allowed. The major operator of the two-up system is Deluxe Coaches, which has been operating under the two-up system since they commenced interstate express work in 1979. Across Australia Coachlines also operates using only two-up driving.

221. In late 1984 the TWU attempted to have companies then operating outside the Award, particularly Deluxe, bound to the Transport Workers (Passenger Vehicles) Award 1984 which virtually prohibits two-up driving. In June 1985 the Australian Conciliation and Arbitration Commission handed down a decision binding Deluxe to an interim award. The interim nature of the award provisions relates to the deferral of the decision on the prohibition or continuation of two-driver systems.[69] This decision was deferred as the Commission was not satisfied that the safety issue had been clearly resolved.

222. The safety of two-up driving, as opposed to staged driving, was an issue which dominated much of the evidence given by witnesses at the Inquiry, particularly where members of the TWU and where coach companies appeared. The Committee was confronted with a barrage of largely anecdotal reports from various operators and drivers on the relative merits and demerits, in safety terms, of two-up and staged driving.

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69. C No 1079 of 1984, Print F9130, p.5.

223. The main contention of those opposed to two-up driving is that it causes greater driver fatigue. Because of the long hours that drivers spend on the vehicle and the sleeping conditions provided, it is claimed that the safety of passengers is jeopardised. Some routes operating the two-up system are as long as 48 hours, which is the Perth to Melbourne trip.[70] The Perth to Wangaratta route operated by Deluxe is 47 hours.[71] Generally drivers change over at a meal break, which is usually at intervals of 4 and a half to 5 hours. Some witnesses maintained that the hours permitted for two-up driving should be much less than are being worked at present.

224. Coaches operating two-up driving generally provide a sleeping area at the back of the bus. On some coaches this is converted from the back row of seats, so that these seats may be utilised if the same coach is used for staged driving services. There are no uniform regulations for the standard of sleeper accomodation, however, the Transport Workers (Passenger Vehicles Two-Person Operations) Award 1984 sets outs conditions for the sleeping compartment in regard to the size of the area, design and bedding. There has been concern that the sleeping facilities at present are inadequate in that the compartment is only separated from the passengers by a curtain. It has been suggested that this should be replaced by a solid fixture with a door so as to give the sleeping driver complete privacy.[72] Opponents to two-up driving claimed that staged drivers are more rested than those who sleep on the bus. Many drivers are unable to gain adequate rest in the sleeping compartment because of adverse conditions prohibiting this rest.[73] The sleeping area is located directly above the engine and next to the toilet facilities which makes it a particularly noisy section of the vehicle. On the other hand, many two-up drivers maintain that they have no difficulty at all in sleeping on the moving vehicle and much prefer this type of operation to staged driving.

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70. Evidence, p.549.
71. Evidence, p.1209.
72. Evidence, p.822.
73. Evidence, p.1194.

225. It was a notable feature of the evidence that those drivers opposed to two-up driving were not then engaged in two-up driving and those drivers currently engaged in two-up driving were very much in favour of it. It is clear to the Committee that individual differences are involved and it is a question of the personal preferences of drivers and the ability of some to sleep on a moving vehicle that determine whether they are better suited to two-up or staged driving. Operators must ensure that individual drivers are suited to the mode of operation being used. It is nonetheless important that sleeper facilities for drivers be of a sufficient standard to ensure the best possible rest in a moving vehicle.

226. Although there was strong opposition to two-up driving because of increased fatigue no witnesses could produce evidence to substantiate their claims that this was unsafe. The Human Factors Research Study referred to earlier, found apparent contradiction between the results of their field study in which they found two-up driving to produce more fatigue, and the results of the accident analysis study in whch they found that the two-up operations had a better crash record than staged driving. This anomaly was pointed out in their study and the study team suggested that two-up driving should be further evaluated.

227. Much of the evidence from witnesses who support two-up driving stresses that it is the safer system as it provides an immediate support driver in the case of an accident or a disturbance on the bus and consequently increases passenger confidence. Although there is some merit in having a back-up driver in these situations this is not a strong justification on safety grounds for two-up driving. If the second driver is taking his rest break it would not be appropriate for him to be assisting with passengers or vehicle difficulties.

228. At the federal level the TWU opposes two-up driving except in remote areas where the operation is considered to be acceptable. The Union justifies the two-up system in these areas because of the lack of any suitable accomodation for drivers, for example as on the Darwin to Port Hedland route.[74] It is also maintained that two-up driving is acceptable in these areas where an accident may occur and there is no available help for some distance. This is the same type of justification that is provided by those who support two-up driving without geographical limitations.

229. Throughout the Inquiry there was some doubt as to whether the two-up issue was in fact a safety issue or whether economic factors were causing the disputation between various groups within the industry. Opponents of two-up driving claimed that the companies who operate under this system do so for reasons of economic advantage as it is the cheaper system to operate. Deluxe, however, refuted this argument and said that the costs associated with two-up driving are similar to those of staged driving. The Bureau of Transport Economics undertook a case study[75] in 1985 to compare the costs associated with both systems. Coach operations between Brisbane, Wangaratta and Perth were looked at for the purposes of the study. Table A in Appendix 5 shows the results of calculating the number of drivers, wages, and driver costs. The basic result of the study is that total driver costs are lowest with a staged-driver system. These results negate the claim made by the TWU and others that two-up driving is only operated for economic reasons rather than safety reasons.

230. The Committee was unable to conclude from its investigations that two-up driving is in fact unsafe as has been claimed or that it is any less safe than staged driving. There are also no accident statistics which show that vehicles

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74. Evidence, p.145.
75. See Appendix 5. This was part of the Australian Long Distance Coach Industry Review, Canberra, BTE, 1985.

operating with the two-up system are involved in a greater number of accidents than those operating with staged driving. Provided that the relief driver is able to get adequate rest, there would appear to be no difference in safety between the two systems of driving. A driver's preference for one system over the other is most probably related to the capacity of the individual to be able to operate effectively with a shift of say 5 hours sleep - 5 hours work and the ability to sleep on the moving vehicle. To ensure that the rest periods are effective it is important that adequate sleeper facilities are provided on all coaches operating the two-up system.

231. The Human Factors Study in America reported that further investigation should be undertaken as their results were inconclusive. It is not clear whether further research would be any more conclusive. Road safety research funds are not unlimited and funds must be allocated to research programs addressing the greatest problem areas. As there is no obvious safety disadvantage of one coach driving system over the other, there can be no priority over other road safety research where definite problems have been identified.

232. Nevertheless, as coach travel is an important public transport mode the Committee believes that improved accident data becoming available through the mass database of the Federal Office of Road Safety should be used to monitor passenger coach safety. Monitoring should take place to ensure that the present high safety standards are maintained and if any decline occurs its possible causes are identified as early as possible.

233. While in no way a criticism of the Arbitration Commission or any of its workings it is clear to the Committee that not all operators and drivers are bound by the provisions of an award. Consequently safety measures such as driving hours, rest periods and the adequacy of on-board sleeping accommodation are matters which should be set out in legislation binding all operators and drivers.

CHAPTER FIVE

SCHOOL BUSES

Introduction

234. Many of the issues concerning the safety of school bus operations are issues that relate generally to all bus operations. School buses along with other buses suffer from a lack of data on their safety. The limited data available does not show that there is a particular safety problem with school buses and therefore the authorities have not seen the need for specific research in this field. The Federal Office of Road Safety has given priority to intercity buses, which are considered to pose more clearly defined safety issues than do school buses, such as the need for seat belts in the front row and greater energy absorption of seats.[1]

Statistics

235. Safety issues relating to school buses are identifiable but there is a lack of data to substantiate or quantify the problem. For trends to be clearly identified it is necessary that separate data be collected for school buses as opposed to other types of bus operations. The collection of accident data for buses is generally very poor and the Committee stresses the importance of the authorities in the States and Territories improving accident data collection procedures so that any relevant safety issues may be identified.

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1. Evidence, pp.1270-1.

School bus operations

236. School bus services are operated under a variety of systems. Many of the services are operated by private contractors, under the authority of the Department of Education in the particular State or Territory. There are also government owned vehicles and vehicles purchased by individual schools for their own use. Some school buses are used only for these services, whereas others are used for other commuter, tour and charter work when not required for school transport commitments. The size of school buses can vary from small minibus vehicles to larger vehicles with seating capacity for up to sixty children.

237. It was claimed that buses originally graded for higher level services and which are no longer suitable for those purposes are often used for school bus operations.[2] Although the Committee was unable to ascertain the extent of this practice, it believes that State regulatory authorities can ensure vehicle roadworthiness and safety by thorough inspection procedures.

237. Despite the varied nature of school bus operations a similar range of problems is faced by authorities across the States and Territories in regard to these services. It is therefore appropriate that a national approach is adopted to focus on school bus safety issues and identify worthwhile safety improvements.

238. Many of the safety issues facing school bus services are issues that are relevant to all bus operations and therefore have been dealt with in earlier chapters. However, there are certain issues which relate only to school buses and these are examined in this Chapter.

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2. Evidence, pp.831-2.

Overcrowding

239. One of the main areas of concern expressed by witnesses is overcrowding in school buses and the safety of children who are standing passengers. School buses are allowed to carry more passengers than buses carrying adult passengers and the number allowed varies between the States and between the various services provided.

240. Generally, school buses are allowed to carry more seated passengers than other bus services. Primary school children are seated three to a double seat, which means that a bus licensed to carry 40 can carry up to 60 children. This policy has been criticised on the grounds that children cannot be comfortably and safely seated three to a seat.[3] Several witnesses called for rules limiting one child to one seat, the same as for adult passengers, for the purpose of safety, comfort and discipline.[4]

241. The appropriateness of having standing passengers is related to the commercial viability of most route bus services. Standing passengers are allowed on most school bus services and also on adult commuter services. In Victoria, for example, standees are not permitted on a vehicle used under charter conditions, however, school buses not operating under charter are permitted to carry standees under the following conditions:

(a) no child shall be required to stand due to the lack of availability of a seat for a greater distance than 10km; and
(b) not more than 12 children shall be carried standing at any one time in any vehicle licensed to carry not less than 27 passengers or proportionally less in any vehicle licensed to carry a lesser number of passengers.[5]

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3. Evidence, p.411.
4. Evidence, pp.356-7, 411, 1041.
5. Evidence, p.372.

242. It has been suggested that these conditions are not being adhered to and that in some cases there are many more passengers standing than the number permitted.[6] Vehicles are licensed for a certain capacity and it is the responsibility of the authorities in each State to ensure that the capacity is not exceeded.

243. In Queensland, the number of students that may be carried is the registered seating capacity of the bus plus a maximum of 50 percent of that number as standing passengers. If the distance the children are to be transported is further than 32kms, no standing passengers are permitted.[7]

244. Although regulations require that there be hand holds for the convenience of standees, in many instances there is an insufficient number of holds and those that are available may not be suitably located to cater for small children. The Committee believes that children should not be carried standing unless sufficient hand holds are available at an appropriate height.

245. Several witnesses called for the banning of standees on school buses for safety reasons, claiming that in the event of an accident no protection is provided for these passengers and they become projectiles. They thus have a far greater risk of injury than seated passengers.[8] In addition, they are a serious threat for those passengers who are seated, particularly when low backed seats are involved.[9]

246. While there have been some complaints of overcrowding on school buses these have generally involved a breach of the licence conditions. It is important that compliance with bus loading limits is monitored adequately.

247. Having large numbers of passengers on buses may not necessarily increase the overall risk of injury to the children but in the event of an accident it has the potential of exposing

6. Evidence, p.385.
7. Evidence, pp.883-4.
8. Evidence, pp.356-7, 361.
9. Evidence, p.1077

a greater number of people to injury.[10] While it is more satisfactory to have all passengers on a bus seated, but until there is comprehensive statistical data available on bus accidents one cannot draw definite conclusions. However, one cannot conclude that because of a lack of statistics there is no problem in this area. The NSW Government stated that the "crowding of school buses is more of a perceived problem of comfort and control rather than one of safety".[11]

Seat belts

248. There are many problems associated with fitting seat belts to buses and these are more pronounced with school bus operations. School buses are often required to accommodate three children to a double seat. Fitting three seat belts would be impractical as many of these vehicles are not used exclusively on school transport. The alternative of providing two seat belts and the subsequent reduction of seating capacity would increase contract prices considerably.

249. Another major problem of seat belts in school buses is that of enforcement. It is not possible for the driver to ensure that seat belts are being worn while at the same time having the responsibility of driving a bus load of children. If belts were fitted it would be necessary to have an extensive education campaign and to provide an adult supervisor other than the driver.

250. Although some witnesses called for the fitting of seat belts to school buses on safety grounds, experience has shown that seat belts in large buses are of lesser value than in the conventional passenger car.[12] The Committee concluded that a general requirement for seat belts in school buses is not warranted on the evidence and instead favours alternative safety measures.

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10. Evidence, p.1115.
11. Evidence, p.1115.
12. Evidence, p.371.

251. The question of fitting seat belts to buses has already been addressed in Chapter Three. The Committee concluded that, apart from fitting belts to the front row of seats, the more effective approach to passenger protection is the development of stronger seat anchorages and more energy absorbent seat structures. As with coach seating, stronger seat anchorages for urban buses is an important issue.

Training and licensing

252. Present conditions allow teachers and other licence holders to drive a bus, providing it is not for the purpose of hire or reward. Drivers such as these do not necessarily have the skills required to drive a bus seating more than 12 adult passengers. Concern was expressed at the competence of these non-professional drivers of school buses.

253. The Queensland Road Transport Industry Training Committee has developed a bus training program and manual for school bus drivers which can be used by suitably qualified individuals or organisations, such as TAFE colleges. The course and manual covers the following areas:

1. Introduction to School Bus Driver Role and Responsibility
   - job duties
   - selection and legal requirements

2. Passenger Control
   - loading and unloading procedures
   - student management
   - reporting discipline problems

3. Accidents and Emergencies
   - accident procedures
   - evacuation procedures
   - using emergency equipment

4. Bus Maintenance and Inspection
   - general maintenance
   - pre-trip checks

5. Driving Fundamentals
   - driving defensively[13]

The Committee believes that the attendance of drivers at approved courses such as this may assist drivers in gaining the necessary skills and knowledge to competently drive a school bus.

254. The Committee has already stressed the importance of carrying first-aid kits on buses and having drivers trained in first-aid procedures, and the recommendations made apply equally to school bus operations.

Safety features

Warning Lights

255. Accidents involving passengers disembarking from school buses are sometimes caused by passing motorists not being conscious of the need for care while passing these vehicles. Special care is needed by motorists when passing a school bus because of the presence of less experienced and less mature pedestrains. One of the ways of making motorists aware of school buses and reducing the likelihood of school children being involved in an accident on the road is for warning lights to be fitted to the buses.

256. In Queensland all school buses are required to have four flashing amber lights fitted - two at the front and two at the rear. The driver of the bus is required to activate the flashing lights during the period that the bus is about to stop, is stationary, and moving off from the position where it had remained stationary.[14]

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13. Evidence, pp.868-9.
14. Evidence, p.885.

257. The U.S. Uniform Vehicle Code and Model Traffic Ordinance provides that every school bus and emergency vehicle, in addition to specified marking and equipment, must have attached to the front of the vehicle, as high as practicable, two alternately flashing red lights. Two lights at a similar level must also be attached to the back of the vehicle.[15]

258. The Committee acknowledges the safety benefits of school buses being fitted with flashing caution lights and therefore recommends that:

the Minister for Transport, through the Australian Transport Advisory Council, encourage all States and Territories to fit flashing warning lights to all school buses.

Passing school buses

259. The U.S. Uniform Vehicle Code and Model Traffic Ordinance provides that cars and other vehicles may not pass any school bus that has stopped to off-load or pick up children.[16] The Committee feels that this is rather an unnecessary step and that it would be detrimental to traffic flow. One witness suggested that it should be made an offence to pass a stationary school bus at more than 24kph.[17] The Committee feels that there may be safety benefits in only permitting vehicles to pass a stationary school bus at a very low speed limit. Combined with the installation of flashing warning lights, this would greatly increase the safety of children boarding and alighting from school buses.

Colour of school buses

260. It is important that a school bus is clearly visible and identifiable as such. This can be achieved by all school buses being painted in a distinctive colour so that all road users can easily identify a school bus on the road.

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15. Evidence, p.428.
16. Evidence, p.428.
17. Evidence, p.356.

261. In Western Australia the Vehicle Standards Regulations states that a school bus shall have "the exterior of the body painted in predominantly orange colour, relieved with green and the roof of cream or white.

262. It may be difficult to implement a uniform colour for school buses as many buses are not used solely for school bus services. Those buses that are used solely for school bus operations, however, should be painted in the same distinctive colour.

Conclusion

263. The Committee was unable to examine thoroughly the issue of school bus safety because of the lack of substantial evidence presented on this subject and the assertion by those road safety authorities who gave evidence that school bus travel does not present any major safety problems. Some areas of safety that could be improved have been identified by the Committee and it is hoped that this will encourage State regulatory authorities to monitor more closely school bus operations to further improve their safety.

261. In Western Australia the Vehicle Standards Regulations states that a school bus shall have "the exterior of the body painted in predominantly orange colour, relieved with green and the roof of cream or white.

262. It may be difficult to implement a uniform colour for school buses as many buses are not used solely for school bus services. Those buses that are used solely for school bus operations, however, should be painted in the same distinctive colour.

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263. The Committee was unable to examine thoroughly the issue of school bus safety because of the lack of substantial evidence presented on this subject and the assertion by those road safety authorities who gave evidence that school bus travel does not present any major safety problems. Some areas of safety that could be improved have been identified by the Committee and it is hoped that this will encourage State regulatory authorities to monitor more closely school bus operations to further improve their safety.

264. The Committee therefore recommends that:

> the Minister for Transport, through the Australian Transport Advisory Council, encourage all States and Territories to investigate and report on aspects of school buses relating to the safety of passengers, such as adequacy of seating, suitability of hand grips, driver training and other areas of concern defined in this report; and where appropriate, to initiate action to ensure that school bus runs meet the highest standards of safety.

CHAPTER SIX

CONCLUSIONS

265. The Committee finds that overall coach and school bus safety is relatively high in road safety terms. Road safety in general is very much in need of improvement beyond the quite marked improvement that has occurred over the last fifteen years. Since the early 1970s an increasingly more professional approach has been brought to road safety problem management. The money available for road safety research and subsequent programs is limited and priorities must be established both in terms of the size of a particular problem and how amenable it is to change.

266. The statistical evidence, although limited in many aspects, shows clearly that coach travel is relatively safe. It is not therefore as great a road safety priority as other areas with serious problems. However, a number of aspects have been identified as problem areas where improvements can and should be made. As coach travel increases in popularity it is essential that present safety standards are monitored and maintained.

E. E. DARLING
Chairperson

23 May 1986

APPENDIX 1

CONDUCT OF THE INQUIRY

On 20 August 1984 the previous Road Safety Committee resolved to inquire into and report on the safety of passenger coach transport.

The Committee placed advertisements in major metropolitan newspapers on 21 and 22 September 1984 inviting interested individuals and organisations to make submissions to the Committee. In addition, regulatory authorities, coach companies, the Transport Workers' Union and other associations with a direct interest in the subject matter of the inquiry were approached directly and invited to make submissions. No public hearings were held before the Committee was dissolved at the Dissolution of the Thirty-Third Parliament.

In the Thirty-Fourth Parliament the Road Safety Committee was not reappointed and the present Transport Safety Committee was appointed in its place. The Transport Safety Committee resolved at its first meeting to continue the unfinished Inquiries of the Road Safety Committee including Passenger Coach Safety.

Commencing on 6 May 1985, eleven public hearings were held in all capital cities except Hobart at which over 1400 pages of evidence were taken. Sixty six submissions were received and 95 witnesses appeared before the Committee. A list of witnesses who appeared before the Committee is given at Appendix 2.

Evidence given at the public hearings is available for inspection at the Committee Office of the House of Representatives and the National Library of Australia.

The Committee held informal discussions with officers of the Federal Office of Road Safety and greatly appreciated the valuable assistance given by the Office to the Committee throughout the Inquiry.

The Committee particularly wishes to thank the Bureau of Transport Economics which undertook a review of the long distance coach industry. The report of this review was invaluable in setting a number of matters into perspective. The case study costing the different driver operations (reproduced in Appendix 5 of this Report) was most useful.

The Committee also wishes to thank Ms Jenny Ellis for her excellent work in preparing this Report along with the Secretary Mr Allan Kelly.

APPENDIX 2

LIST OF WITNESSES

List of witnesses including date of appearance before the Committee and transcript reference number.

ARMFIELD, M.G.	Driver, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.
BANNERMAN, G.R.	Driver, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.
BISHOP, L.J.	Member, Commercial Vehicle Industry Association of Queensland, 42 Colebard Street, East Archerfield, QLD, (31 July 1985), pp.1065-1091.
BISHOP, R.M.	Chairman, Central Inspection Authority, and Chief Engineer, Division of Road Safety, South Australian Department of Transport, Adelaide, S.A., (26 June 1985), pp.578-617.
BOON, J.	Bus and Coach Representative, Technical Committee, Commercial Vehicle Industry Association of New South Wales, 356-358 Chapel Road, Bankstown, NSW, (20 Sept 1985), pp.1216-1234.
BOUGHTON, C.J.	Assistant Secretary, Road User Branch, Federal Office of Road Safety, Department of Transport, Canberra, ACT, (9 April 1986), pp. 1332-1362.
BOURKE, D.P.	Delegate (Greyhound), Transport Workers Union of Australia, PO Box 110, Darwin, N.T. (29 July 1985), pp.820-840.
BRICE, M.E.	Assistant Commissioner, Policy and Planning, Queensland Department of Transport, PO Box 673, Fortitude Valley, QLD, (31 July 1985), pp.844-940.
BUDD, R.A.	Assistant Secretary, Policy Development Branch, Road Safety Division, Department of Transport, Canberra, ACT, (6 May and 16 Oct 1985), pp.3-74, 1261-1272.

BURTON, J.D. Vice President, Australian Bus and Coach Association, PO Box 2337, North Parramatta, NSW, (20 Sept 1985), pp.1129-1155.

CAMPBELL, P. Acting Manager, Licensing and Services Division, Police Department, Perth, W.A. (24 June 1985), pp.473-512.

CLOSE, W.H. Member, Transport Industries Advisory Council, Department of Transport, Canberra, ACT, (20 Sept 1985), pp.1156-1181.

COLLIER, J.D. Operations Manager, ACTION Buses, Public Transit Branch, Department of Territories, Canberra, ACT, (6 May 1985), pp.75-112.

COOMBS, L.W. Member, Transport Workers Union, Russell Street, Toowoomba, QLD, (31 July 1985), pp.1019-1032.

COUCILL, B. Managing Director, Briscoes Charter Service Pty Ltd, Ansett Briscoes, 101 Franklin Street, Adelaide, S.A., (26 June 1985), pp.618-652.

CRAWFORD, J.A. Chairman, Briscoes Charter Service Pty Ltd, Ansett Briscoes, 101 Franklin Street, Adelaide, S.A., (26 June 1985), pp.618-652.

DAY, R.M. Driver, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.

DOCKRILL, B.G. First Assistant Secretary, Transport and Technical Services Division, Department of Territories, Canberra, ACT, (6 May 1985), pp.75-112.

DONALDSON, J.G. Director, Vehicle Standards and Emissions, Department of Transport, Canberra, ACT (16 Oct 1985), pp.1261-1272.

ELLIOTT, R.J. Coach Captain, Greyhound Australia Pty Ltd, Member, Transport Workers Union, Trades Hall, Perth, W.A. (24 June 1985), pp.535-576.

EVANS, J.R. First Assistant Secretary, Land Transport Policy Division, Department of Transport, Canberra, ACT, (9 April 1986), pp.1332-1362.

FLEMING, G.M. Coach Driver, McCafferty's Coaches, Neil Street, Toowoomba, QLD, (31 July 1985), pp.1019-1032.

FLETCHER, B.C. Delegate (Ansett), Transport Workers Union of Australia, PO Box 110, Darwin, N.T. (29 July 1985), pp.820-840.

FORREST, J.T. Yard Delegate, Transport Workers Union of Australia, 17/25 Lygon Street, Carlton, VIC, (26 June 1985), pp.653-669.

FREE, K.J.	Acting Director, Transport Regulation, Department of Territories, Canberra, ACT, (6 May 1985), pp.75-112.
GAY, R.K.	Managing Director, Executive Express, Mordialloc, VIC, (18 Oct 1985), pp.1275-1287.
GIUDICE, G.	Barrister, 500 Bourke Street, Melbourne, VIC (5 June 1985), pp.253-328.
GOODINSON, G.	Driver, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.
GRIFFITHS, M.	Principal Research Scientist, Engineering and Medical Section, Traffic Authority, Rosebery, NSW, (20 Sept 1985), pp.1100-1128.
GUIVARRA, F.	Senior Industrial Relations Officer, Transport Workers Union of Australia, PO Box 110, Darwin, N.T. (29 July 1985), pp.820-840.
GUNNING, R.	Acting Assistant Secretary, Road Transport Branch, Land Transport Policy Division, Department of Transport, Canberra, ACT, (6 May 1985), pp.3-74.
HAIN, L.	Spokesman on Bus Safety, Victorian Council of School Organisations, Bourke Street, Melbourne, VIC, (5 June 1985), pp.355-392.
HALLETT, A.	Coach Captain, Deluxe Coachlines, Newman Street, Wangaratta, VIC, (20 Sept 1985), pp.1202-1215.
HALLION, J.V.	Manager, Policy and Research Branch, Division of Road Safety, South Australian Department of Transport, Adelaide, S.A., (26 June 1985), pp.578-617.
HANNEY, J.B.	Senior Inspector, Acting Chief Superintendent, Traffic, Police Department, Perth, W.A. (24 June 1985), pp.473-512.
HARTNETT, P.J.	Organiser, Transport Workers Union, 82 Beaufort Street, Perth, W.A. (24 June 1985), pp.535-576.
HEACOCK, R.H.	Director of Planning, Policy Development Branch, Road Safety Division, Department of Transport, Canberra, ACT, (6 May 1985), pp.3-74.
HEWITT, J.V.	Director of Land Transport and Registrar of Motor Vehicles, Northern Territory Department of Transport and Works, Darwin, N.T., (29 July 1985), pp.673-819.

HICKS, W.K.	Member, Transport Industries Advisory Council, Department of Transport, Canberra, ACT, (20 Sept 1985), pp.1156-1181.
HILL-WEBBER, B.	Chairman, Institute of Advanced Motorists of Queensland, 25 Clewitt Street, Zillmere, QLD, (31 July 1985), pp.1033-1049.
HODGES, J.	Chairman, Commercial Vehicle Body Manufacturers Association, Division of Victorian Automobile Chamber of Commerce, 464 St Kilda Road, Melbourne, VIC, (5 June 1985), pp.329-354.
HODGSON, I.	Member, Transport Industries Advisory Council, Department of Transport, Canberra, ACT, (20 Sept 1985), pp.1156-1181.
also appeared as	Federal Secretary, Transport Workers Union of Australia, 388 Sussex Street, Sydney, NSW, (20 Sept 1985), pp.1182-1201.
KENT, M.J.	Manager, Regulation Strategies, Victorian Road Traffic Authority, 854 Glenferrie Road, Hawthorn, VIC, (28 April 1986).
KENT, N.F.	Commissioner for Transport, Queensland Department of Transport, PO Box 673, Fortitude Valley, QLD, (31 July 1985), pp.844-940.
KING, P.J.	Driver, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.
KNOX, J.R.	Transport Consultant, 125 Swanston Street, Melbourne, VIC, (5 June 1985), pp.253-328.
LAMBROSE, J.D.	State Convenor for Road Safety, Australian Democrats Party, Queensland Division, 14 Arlington Street, Underwood, QLD, (31 July 1985), pp.1050-1064.
LEES, I.J.	Director, Division of Road Safety, South Australian Department of Transport, Adelaide, S.A., (26 June 1985), pp.578-617.
MAKEHAM, P.M.	Assistant Secretary, Motor Transport Branch, Road Safety Division, Department of Transport, Canberra, ACT, (6 May and 16 Oct 1985, 9 April 1986), pp.3-74, 1261-1272, 1332-1362.
MARR, G.	Coach Captain, Australian Pacific, 475 Hampton Street, Hampton, VIC, (5 June 1985), pp.131-191.
MATTHEWS, N.R.	Assistant Secretary, Policy Development Branch, Federal Office of Road Safety, Department of Transport, Canberra, ACT, (9 April 1986), pp. 1332-1362.

MICHELMORE, D.	Coach Captain, Briscoes Charter Service Pty Ltd, 101 Franklin Street, Adelaide, S.A., (26 June 1985), pp.632-652.
also appeared as	Yard Delegate, Transport Workers Union of Australia, 17/25 Lygon Street, Carlton, VIC, (26 June 1985), pp.653-669.
MILLAR, D.D.	Executive Officer, Commercial Licensing, Department of Transport and Works, Northern Territory Government, Darwin, N.T., (29 July 1985), pp.673-819.
McCAFFERTY, J.T.	General Manager, McCafferty's Management Pty Ltd, 28-31 Neil Street, Toowoomba, QLD, (31 July 1985), pp.941-973.
McDERMOTT, T.	Manager, Research and Development Engineering, JRA Ltd, Cnr Church Road and Heathcote Road, Moorebank, NSW, (16 Oct 1985), pp.1239-1260.
McGILL, B.	Coach Captain, VIP Express Coaches, Shop Steward, Transport Workers Union, 179 Stirling Street, Perth, W.A. (24 June 1985), pp.535-576.
McGRATH, K.	Federal Assistant Secretary, Transport Workers Union of Australia, 17/25 Lygon Street, Carlton, VIC, (5 June, 24 June, 26 June and 31 July 1985), pp.131-191, 535-576, 653-669, 1019-1032.
McINTYRE, G.	General Manager, Deluxe Coachlines Pty Ltd, 500 Collins Street, Melbourne, VIC, (5 June 1985), pp.253-328.
NOONAN, B.	Industrial Research Officer, Victorian Branch, Transport Workers Union of Australia, PO Box 203, Port Melbourne, VIC, (5 June 1985), pp.131-191.
NORRIS, C.S.	Driver, Deluxe Coachlines, Newman Street, Wangaratta, VIC, (20 Sept 1985), pp.1202-1215.
O'NEIL, K.O.	Director of Administration, Education Department of Western Australia, 151 Royal Street, East Perth, W.A., (24 June 1985), pp.395-472.
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APPENDIX 3

DRIVING LICENCE CLASSIFICATION AND REQUIREMENTS - BY STATE

LICENCE CLASS CODE	VEHICLE TYPE	MINIMUM AGE	OTHER REQUIREMENTS
	NEW SOUTH WALES		
1	basic car	17	pass test
2	taxi, small public vehicle	19	
4	large public bus	20	hold class 1 for 2 yrs, declare criminal record, pass test, medical certificate
	VICTORIA		
DC	basic car	18	pass test
MC, MO	metro bus	19	endorsed basic driver (DC), medical certificate
UC, UO	urban bus	19	declare criminal record, pass test
CC, CO	country bus	19	
TO	tour bus	19	
TS	school bus	19	
TP, SV	special bus	19	
PO	private bus	19	
	QUEENSLAND		
A	basic car	17	pass test
D	omnibus	21	hold class A,B,C; medical test, pass test

WESTERN AUSTRALIA

A	basic car	17	pass test
F	omnibus	21	pass test, medical certificate
G	taxi	21	declare criminal record
H	bus, not A, G or F	21	

SOUTH AUSTRALIA

1	basic car	16	pass test
5	bus: up to 12 passengers	18	pass test, medical certificate, declare criminal record
	: 13-24 passengers	18	
	: over 24 passengers	18	

TASMANIA

A	basic, including taxis	17	pass test
C	medium passenger vehicle	20	pass test, medical test, character reference
CA	heavy passenger vehicle	20	declare criminal record
E	combination passenger vehicle	21	

NORTHERN TERRITORY

A	basic car	17	pass test
B	hire cars	18	hold class A
D	buses	18	hold class C (truck), pass test, character reference, declare criminal record, medical certificate

AUSTRALIAN CAPITAL TERRITORY

2	basic car	17	pass test
3	taxi	21	hold class 2
5	omnibus	21	hold class 2, pass test, medical examination, declare criminal record

Source: Federal Office of Road Safety, evidence, Submission, pp.34-5

COMPARISON OF 1978 AND 1983
FREE SPEED SURVEY RESULTS (KM/H)

1978

	CARS				TRUCKS				Car Truck Mean Spd Diff.
	Spd Lmt	Mean Spd	Std Dev.	85th %-ile	Spd Lmt	Mean Spd	Std Dev.	85th %-ile	
NSW	100	97.8	14.2	112.1	80	82.7	9.7	91.5	15.1
	80	103.0	15.0	119.3	80	87.0	9.3	98.4	16.0
VIC	100	97.7	12.0	109.0	80	78.2	9.5	88.3	19.5
QLD	100	94.1	11.4	104.7	100 [*]	82.5	9.8	93.0	11.6
WA	110	93.1	13.1	102.2	80	–	–	–	–
SA	110	96.1	12.3	107.9	80	80.9	9.8	91.3	15.2

1983

		CARS					TRUCKS				Car Truck Mean Spd Diff. #
	Road Class	Mean Spd	Std. Dev.	85th %-ile	%> Spd Lmt	Mean Spd #	Std. Dev	85th %-ile	%> Spd Lmt	
NSW	[a]	96	12.4	108	38.0%	84	9.9	93.5	67%	12.0
	[b]	104	13.2	115	61.5%	89	8.2	97.0	85%	15.0
VIC	[a]	96	10.0	106	29.0%	87	8.5	96.0	75%	9.0
	[b]	94	10.5	103	26.0%	83	11.4	93.0	56%	11.0
QLD	[a]	91	10.4	101	16.0%	82	8.8	91.5	20%	9.0
	[b]	98	11.3	109	43.0%	87	10.7	97.0	37%	11.0
WA	[a]	102	12.5	114	24.0%	84	12.0	96.0	65%	18.0
SA	[a]	97	11.2	108	10.0%	81	10.3	90.0	53%	16.0
	[b]	97	9.4	106	7.0%	82	7.3	87.0	60%	15.0

*reduced to 90km/h in 1982

0 Callaghan (1978) reports "over 50% of heavy commercial vehicles exceed 80km/h and almost 50% of cars exceed 100km/h in most States", based on 1978 speed survey.

Source: Federal Office of Road Safety, Heavy Vehicle Speed Limits, August 1985, p.31

[a] two-way, two-lane, undivided
[b] four-lane, divided

APPENDIX 5

BUREAU OF TRANSPORT ECONOMICS CASE STUDY[1]

COSTING OF AN EXPRESS COACH OPERATION

In order to provide an illustrative example of cost structures in the express coach industry a case study operation has been investigated and costed. It is important to note that costs only directly relate to the case study operation, although they are considered to be indicative of costs throughout the industry.

This case study involves an operation consisting of one return service per day between Brisbane and Perth via Melbourne. The operation of this service could be seen as a discrete operation or as part of a more extensive network.

The details of operation on this route are thus:

- length of journey - 5690 kilometres
- duration - 3 days (63 driving hours)
- departure times - Brisbane 8.00 am
  - Perth 8.00 am
- total number of services per week - 14
- total kilometres per week - 79 660 kilometres
- total driving hours per week - 882 hours.

Nine express coaches are assumed for this operation - eight en-route and one as a backup. Running maintenance is carried out during layover periods, whilst the backup coach is used on a rotation basis to enable the other coaches to be withdrawn from service for more extensive maintenance. This additional coach is also used if a significant mechanical defect occurs in one of the scheduled coaches. The backup coach could also be used for charter operations and would be used to expand the service offered during the peak season (December and January).

Of the nine coaches, three are assumed to have been purchased in each of 1981, 1983 and 1984 at a cost of $175 000, $210 000 and $250 000 per coach respectively; under five-year lease agreements

1. This Study is taken from the Bureau of Transport Economics, Australian Long Distance Coach Industry Review, Occasional Paper 74, AGPS, Canberra, 1985, Appendix II.

with a 25 per cent residual. The lease agreements are based on interest rates of 20, 17 and 15 per cent for the respective years 1981, 1983 and 1984. Capital repayment details are set out in Schedule 1.

Wages for the coach drivers are based on the Transport Workers (Passenger Vehicles) Award 1984. The wage costs for this operation are estimated under the three systems described in Chapter 3. These are the driver-staging system, the system used by Deluxe and the new two-up award. The total costs of employing drivers are shown in Table A.

TABLE A - WEEKLY DRIVER COSTS FOR A CASE STUDY OF A COACH SERVICE OPERATING BRISBANE-MELBOURNE-PERTH

	Method of employment		
	Staged-driver	Deluxe[a]	New two-up award
Driver costs ($/week)			
Wages[b]	9 444	10 832	13 998
Payroll tax[c]	725	832	1 075
Leave[d]	1 273	1 480	1 109
Accommodation[e]	1 575	700[f]	700[f]
Total	13 017	13 845	16 881
Number of drivers	31	27	27
Average wage ($/week)	305	401	518

a. Based on the flat daily rate paid by Deluxe.
b. Based on the 1984 Award which provides $272.10 for each 40 hour week. A long vehicle allowance of $3.30 a day has been included as well as provision for 1/2 hour to sign on and 1/4 hour to sign off.
c. Payroll tax and workers compensation at 7.68 per cent.
d. Leave costs calculated at $41.07 per driver per week (including payroll tax at 5 per cent) to allow for annual and sick leave.
e. Accommodation costs based on a rate of $25 per night.
f. Turnaround accommodation provided at or near ends of route.

Note: Figures may not add due to rounding.

Sources: BTE calculations based on: Deluxe Coachlines Timetable (1985); Transport Workers (Passenger Vehicles) Award (1984); Interim Award by Commissioner Sheather, ACAC, 26 June 1985.

The basic conclusion is that total driver costs are lowest with a staged driver system while the two-up system pays the highest wages and employs fewer drivers. In this example the Deluxe system is 6 per cent more costly than staged-driving and the new two-up award is 22 per cent higher than the Deluxe system.

It is important to note that these figures are estimates based on BTE scheduling and will obviously vary amongst operators, due to different scheduling methods and the extent to which over-award payments are made. In their submission to the Australian Conciliation and Arbitration Commission (ACAC), Deluxe calculated an overall increase in driver wages of 18 per cent under the new two-up award for the part of their network where two-up drivers are used.

Operating costs have been estimated using November 1984 prices, associated discounts, and average consumption rates as supplied by industry sources. Maintenance costs are based on updated TRB figures for country service operators compiled from uniform financial returns. The estimate used is the June 1980 figure indexed to 1984 using the transportation component of the CPI.

The TRB figures, although aggregate figures for country service operators (of which 64 per cent of kilometres are accounted for by route/charter and touring operations), are expected to provide a reasonable estimate.

Due to the variability of overheads, no precise estimate is included. Instead, a margin has been left between estimated revenue and total other costs which provides an idea as to the overheads possible under the given fare levels.

With respect to revenue, both a $159.00 fare and a $206.00 fare are used to estimate revenue. Revenue estimates are based on a 44 seat capacity with an average 75 per cent occupancy rate. No concession is available on the $159.00 fare although a 10 per cent concession is available on the $206.00 fare.

The costs associated with operating this coach between Brisbane and Perth are shown in Table B.

The revenue based on a low fare of $159 is $73 500 per week (92 cents per kilometre) and based on a high fare of $206 is $90 400 (113 cents per kilometre). These estimates produce margins from 24 to 50 cents per kilometre between costs (less overheads) and revenue.

TABLE B - COSTS PER WEEK[a], EXPRESS COACH SERVICE BETWEEN BRISBANE AND PERTH VIA MELBOURNE

(Dollars)

	Method of employment		
	Staged-driver	Deluxe[b]	New two-up award
Capital and on-road costs	10 300 (13)	10 300 (13)	10 300 (13)
Operating costs	27 100 (34)	27 100 (34)	27 100 (34)
Driver wages	13 000 (16)	13 800 (17)	16 900 (21)
Total	50 400 (63)	51 200 (64)	54 300 (68)

a. Not including overheads.
b. Two-up driving with costs based on a flat daily rate paid by Deluxe.

Note: Figures in parentheses are cents per kilometre.

Under driver staging the annual margins are around $1.2m and $2.1m for the two fare structures. Under the Deluxe system these annual margins are $1.2m and $2.0m. Under the new two-up Award they are $1.0m and $1.9m. This means that overheads must come within the relevant margin to ensure that the operator at least breaks even. If overheads are greater than this then the operator must either lower costs elsewhere or maintain a higher occupancy rate, assuming that the same fare is maintained. Where a significant number of bookings are made through travel agencies the revenue obtained will fall, this reducing the margin for overheads. For example, if a 20 per cent commission is payable on 70 per cent of fares in the case study operation, revenue is reduced cutting the overhead margin by 30 to 50 per cent.

Revenue can be significantly boosted by the peak season. If a 90 per cent occupancy rate is assumed for six weeks, this increases the annual margins by $90 000 and $110 000 for the two fare structures. This could be made much larger by the use of additional services which would be provided by using sub-contractors. Because the market at present exhibits a high degree of competition it could be expected that fare levels would be highly dependent on cost structures. Costs, in turn, would appear to be similar for all operators except for overheads.

Thus, as illustrated in the above case study operation, much of the difference in fares between the operators could possibly be explained by differences in overhead costs, which in turn enable the discount operators to charge lower fares because of their lower overhead structure. It may be significant in this case in that it is the newer entrants specialising in express services over the high density routes who are able to offer cheaper fares, whereas it is the older, more established operators that are charging premium fares.