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Abstract

This study was commissioned to provide, on a comparable basis throughout urban and rural Australia, information on seat belt wearing rates and the characteristics of people not wearing seat belts. Study data was obtained from observations of seat belt wearing behaviour and interviews with seat belt wearers and non-wearers. Interviews and observations were conducted in the capital city, and in one provincial town and one country town in Queensland, South Australia and Western Australia.

A statistical modelling exercise was undertaken to isolate factors which have a significant influence on seat belt wearing rates. No generally significant pattern was evident across Australia.

KEYWORDS:

Seat Belt, Occupant, Restraint, Usage, Compliance, Survey, Statistics, Modelling, Models, Attitudes, Socioeconomic, Country, Urban, Provincial, Australia.

NOTES:

- (1) FORS research reports are disseminated in the interests of information exchange.
 - (2) The views expressed are those of the author(s) and do not necessarily represent those of the Commonwealth Government.
 - (3) The Federal Office of Road Safety publishes two series of research reports:
 - (a) reports generated as a result of research done within the FORS are published in the OR series
 - (b) reports of research conducted by other organisations on behalf of the FORS are published in the CR series.

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2. SURVEY METHODOLOGY

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The Consultants acknowledge the co-operation and assistance of FORS, CES staff, and local authority and police personnel in the nine Centres surveyed.

Particular acknowledgement is given to the large number of service station proprietors who allowed their premises to be used as observation and interview sites.

(ii) EXECUTIVE SUMMARY

Significant conclusions of the study are reported below:

- (i) Cameron McNamara, Consultants, were commissioned by the Federal Office of Road Safety in 1986 to undertake a study of seat belt wearing in capital cities, and provincial and rural towns in Queensland, South Australia and Western Australia.
- (ii) Of the 21 000 vehicle occupants observed, 79 per cent were found to be wearing seat belts.
- (iii) Seat belt wearing averaged 85% in the capital cities, 78% in the country towns and 73% in the provincial towns.
- (iv) Seat belt wearing varied considerably according to the occupant's position in the vehicle. Seat belt wearing was 84% in the driver's seat, 80% in the front passenger's seat and 63% in the rear seat.
- (v) Seat belt wearing appears to increase generally with age, and ranged from 67% in the 1-7 years group to 89% in the 30-49 years group.
- (vi) Slightly more females (81%) than males (79%) were observed to be wearing seat belts, although this difference was not significant.
- (vii) Of the two major types of restraint fitted, markedly higher usage rates were recorded for inertia reel belts (86%) than for static belts (69%).
- (viii) Variability in seat belt wearing was observed between vehicle types. Restraint usage was highest in cars/stations wagons (81%) and lowest in utilities/panel vans (69%).

- (ix) Seat belt wearing generally increased with the length of travel on the trip prior to interview, being lowest for a distance of 1 km (73%) and highest for trips of 15 km and over (82%).
- (x) A clear pattern of seat belt wearing by time of day and day of week was not apparent. Noticeable however was the tendency for seat belt wearing to decrease strongly over the course of the day on Sunday.
- (xi) Seat belt wearing tended to decline as weather conditions worsened from "fine" to "heavy rain" but increased during storm conditions, a result which may be due to random variation.
- (xii) Three samples of vehicle occupants were compared in terms of selected socio-economic indicators, namely, household income, educational achievement and occupational status. Within the broad age groupings examined the results evidence a tendency for drivers who were wearing seat belts to have higher levels of both educational achievement and household income than either drivers who were not wearing seat belts or passengers who were not wearing seat belts. Drivers who were wearing seat belts were also more likely to be employed in "white collar" occupational groupings.
- (xiii) A sample of vehicle occupants was asked to nominate reasons why they were not or occasionally might not wear a seat belt. Approximately three quarters of respondents nominated the following reasons: "short distance", "uncomfortable", "couldn't be bothered" and" forgets belt".

1.1 BACKGROUND

Seat belt wearing is widely regarded as a measure successful in reducing motor vehicle crash fatalities and injuries. Legislation has been in place for some time in all Australian States and Territories requiring the fitting and wearing of seat belts (DoT, 1985). Despite the effectiveness of seat belts in preventing or reducing the severity of injuries in road crashes, an appreciable number of vehicle occupants still do not wear seat belts. Considerable local variability exists in wearing rates with differences appearing to occur between States and between regions within States (Ove Arup, 1986).

Therefore, to redress this situation it is essential that data on occupant restraint usage be collected consistently for a variety of regions across Australia. Accordingly the Federal Office of Road Safety (FORS) appointed Cameron McNamara Consultants, to conduct a survey in Queensland, South Australia and Western Australia. In each State, data was obtained in three towns (a capital city, a provincial town and a country town) to explore behavioural differences between urban and rural communities.

This document is the main report on the methodology and findings of the survey.

1.2 PREVIOUS STUDIES

Two previous studies of seat belt wearing behaviour commissioned by FORS are relevant to this study.

Pederson and Mahon (1983) developed a methodology for obtaining data on seat belt wearing and analysing its characteristics. This study was conducted in the Canberra-Yass region. In particular, their study recommended types of sites suitable for observing seat belt wearing behaviour and interviewing vehicle occupants, sample selection and interview techniques and a methodology for analysing seat belt wearing data. The Pederson and Mahon methodology was further tested by Ove Arup and Partners (1986) in a study based on surveys conducted in six provincial towns in Victoria, South Australia and Western Australia. The Ove Arup study found fast food outlets a successful type of venue for surveying vehicle occupants, and tested a number of sites for their suitability as observation points. A recommended questionnaire format was put forward and in this instance the Consultants found that persons registered with the Commonwealth Employment Service (CES) represented a suitable source of interview staff.

1.3 STUDY OBJECTIVES

As defined in the Terms of Reference the objectives of the study are: 'To provide information on seat belt wearing rates, and the characteristics of people not wearing seat belts throughout urban and rural Australia on a comparable basis.'

1.4 CONDUCT OF THE STUDY

Cameron McNamara Pty. Ltd. have been responsible for the conduct of the survey in accordance with the general framework defined by FORS.

The main tasks undertaken by the Consultants were:

Review of field procedures, site selection criteria and questionnaire forms;

Preparation of field staff instructions;

Recruitment and briefing of field staff;

Site selection;

Conduct and management of the field work;

Editing, coding and punching of the data;

Computer analysis of the survey results;
Reporting.
FORS have been responsible for defining:
the towns at which interviewing was conducted;

the type of data to be collected;

the periods of field work.

The study had two discrete phases.

The first phase involved the collection of observation and interview data on occupant restraint usage in Queensland, South Australia and Western Australia. Surveys were conducted in the capital city, in one provincial town and one country town in each State and at a number of sites within each centre.

Analysis of the survey results was undertaken in the second phase.

1.5 REPORT OUTLINE

Following this introductory section there are five sections and one appendix in the report.

The survey methodology is discussed in Section 2. Section 3 contains a descriptive analysis of the survey results. Conclusions and Recommendations are contained in Section 4 and 5 respectively. References are shown in Section 6.

Appendix A presents copies of the survey questionnaire and prompt sheets.

1.6 TERMINOLOGY

The following abbreviations are adopted throughout the report:

- SBW Seat Belt Wearing
- NSBW Non Seat Belt Wearing
- DWSB Drivers Wearing Seat Belts
- DNWSB Drivers Not Wearing Seat Belts
- PNWSB Passengers Not Wearing Seat Belts

2.1 INTRODUCTION

This section of the report discusses the methodology employed for the survey. In accordance with the Terms of Reference, the survey methodology was generally based on the conclusions of previous studies (Pederson and Mahon 1983; Ove Arup 1986) which tested a variety of approaches to obtaining reliable seat belt wearing data. Some minor modifications were made to these procedures after consultation with FORS.

In accordance with the study objectives, data were sought on:

- (i) rates of seat belt wearing and non-wearing in each of the centres to be surveyed;
- (ii) trip making by drivers on the day of interview and on an annual basis;
- (iii) attitudes to seat belt wearing and demographic data relating to:
 - vehicle occupants not wearing a seat belt at the time of interview;
 - . drivers of vehicles.

2.2 SURVEY LOCATIONS & DATES

Towns surveyed and dates of survey are shown in Table 2.1. A map showing the location of the survey towns is presented as Figure 2.1.



TABLE 2.1

STATE	TOWN	TOWN	DATES
	TYPE		1986
QLD	Capital	Brisbane	18/6-24/6
	Provincial	Townsville	19/6-25/6
	Country	Longreach	12/6-18/6
SA	Capital	Adelaide	17/6-23/6
	Provincial	Port Pirie	17/6-23/6
	Country	Clare	17/6-23/6
WA	Capital	Perth	18/6-24/6
	Provincial	Albany	18/6-24/6
	Country	Merredin	19/6-25/6

SURVEY LOCATIONS & DATES OF SURVEY

The towns to be included in the survey were determined by FORS. However, practical considerations meant that some alteration to the original list needed to be made.

Originally, Blackall and Meekatharra had been proposed as the country towns for survey in Queensland and Western Australia respectively. However, it was ascertained that suitable field staff could not be recruited in these areas and it was agreed that the survey would be carried out at the alternative towns shown.

2.3 PREVIOUS SURVEYS

Prior to the commissioning of this survey, a study was carried out for FORS by Ove Arup (1986) using local staff recruited from CES offices in six country centres in Victoria, South Australia and Western Australia. The methodology and questionnaire forms were developed during the course of the study. The only major problem reported by Ove Arup was in obtaining sufficient numbers of longer distance travellers. Otherwise they reported no problems and recommended that use of CES staff and forms as modified were suitable for an Australia wide survey.

2.4 MODIFICATIONS TO SURVEY TECHNIQUES

During the initial stages of the study Cameron McNamara reviewed the survey methods and procedures developed in the previous surveys. Minor revisions were made after consultation and agreement by FORS. The modifications are outlined in the following sub-sections.

2.4.1 Sites

Vehicles were only surveyed at service stations. Sites at shopping centres and fast food outlets were not used for the following reasons:

service stations would provide a more representative sample of drivers vehicles, as all vehicles use service stations;

selection of service stations on the periphery of towns would give an increased chance of obtaining information on longer distance travellers about whom little information was available;

often, in the smaller country towns, there were no large shopping centres or fast food outlets;

use of service stations would allow the survey methodology to be easily repeated/duplicated in the future.

Country Sites:

Except for sites in the capital cities, the volume of traffic using service stations (and most other facilities) is at all times low. Hence, for reasons of survey efficiency, only one staff member worked at each site both observing and interviewing almost all vehicles using the site.

Capital City Sites:

For the capital cities, higher volume sites were sought and these do exhibit volumes beyond the capacity of one observer/interviewer during some periods. These periods are at weekends and sometimes in the late afternoons. However, outside these periods volumes are quite low.

Initially it was intended to vary the procedure during these peak times when volume exceeded the capacity of a single observer/interviewer. The aim was to obtain as many interviews of non-seat belt wearers as possible. As these were expected to be relatively few it was intended that 60% of the time be devoted to such interviews, with 25% being devoted to observation, and the remaining 15% being allocated to interviewing of drivers of vehicles in which all occupants were wearing seat belts.

This procedure in fact was not practical. In the first place, it was not possible to predict with sufficient accuracy the periods in which volumes would exceed the capacity of an observer/interviewer.

More importantly, service station proprietors were very sensitive to possible disruption to their business by interviewers causing congestion at the pumps. **Permission to carry out the survey** was in fact refused on these grounds at several high volume sites and even those who consented emphasised that there should be no interruption of their business. Field staff were instructed to limit their activities to observations during heavy traffic periods when interviewing could cause operational problems.

2.4.3 Interviewing of Non-Seat-Belt Wearers

In previous surveys all interviews were conducted with drivers. To extend the information base in this survey, passengers not wearing seat-belts were also interviewed to determine their attitude to seat-belt wearing and their socio-economic characteristics.

Interviewing of non-driver occupants was initiated through the driver. When difficulties were encountered in interviewing non-drivers - for example in the case of children - the driver's assistance was sought.

Where more than one occupant of a car was not wearing a seat belt the survey respondent was chosen from amongst non-seat belt wearers by a randomised selection routine.

For cars with all occupants wearing seat belts all interviews were conducted with drivers.

2.4.4 Questionnaire Design

Observation forms and questionnaires were based on the recommended formats developed in the study carried out by Ove Arup. Some minor modifications were made to improve accuracy of data recording. The changes made were:

Observation section

observation and questionnaire data were collected on the same sheet rather than two, because one person collected observation and interview information;

information on nursed children was coded separately as it was found that observers experienced difficulty in coding this on the original form;

the rarely used boxes for the third seat were "dashed" to reduce the possibility of errors caused by coding data from other seating positions.

Interview Section

driver travel estimates - it was found that many drivers had a problem in estimating their actual travel distance. To improve this situation two measures were taken. Firstly, the order of the questions on travel were rearranged to ensure that the more readily answerable questions on that day's travel were answered first to assist annual travel estimation. Secondly prompt sheets were prepared to assist the conversion of average daily travel to annual travel;

information was collected on the coding forms to ensure that the occupant being interviewed could be identified.

A copy of the questionnaire and prompt sheets are contained in Appendix A.

2.5 FIELD STAFF

2.5.1 Staff Selection & Training

CES offices at the various centres selected candidate interview personnel. Members of the Consultants' staff then visited each centre and, following interviews and short field trials selected the most suitable field staff available.

Budget and time constraints, the compactness of the survey over seven contiguous days, and the simultaneous surveying of the nine geographically spread centres provided some problems in monitoring the performance of interviewers. To assist in this regard a leader was selected from the field team in each centre to organise and monitor the field work locally and report any problems to the Consultants for resolution.

After selection of a team, its members were given a training session of two to three hours. This included detailed information on the survey and instruction on filling out of the forms, and practical experience at a nearby service station. The appointed leaders were instructed on their responsibilities for local organisation, monitoring and reporting.

2.5.2 Field Staff Performance

Field staff performed creditably and in particular, there was little absenteeism. While an improvement in the quality of results could be obtained through the use of experienced survey staff, any such change in future surveys would need to be considered in the light of the obvious budgetary implications.

2.6 SITE SELECTION

Selection of candidate sites for survey was carried out by the Consultant's staff on the site visits. Sites were chosen which would yield an adequate representation of longer distance drivers. Accordingly, two classes of sites were selected: one class (A) on National Highways or on the highest functional road class passing through the town, and the other class (B) on lower functional class roads. Survey time was apportioned approximately in the ratio of 60% to A and 40% to B, with a maximum of 50% to class B.

3. SURVEY RESULTS

3.1 INTRODUCTION

The results of the survey have been summarised under four headings:

observed seat belt wearing behaviour;

attitudes to seat belt wearing of

- vehicle occupants not wearing seat belts
- drivers of vehicles in which all occupants were wearing seat belts;

socio-economic data relating to interview respondents.

Data on seat belt wearing rates have been obtained from the observation component of the survey while the interview section yielded the attitudinal and socio-economic data.

In collecting the survey data, the Consultants endeavoured to ensure that observations and interviews conducted were representative of the traffic composition passing through each of the survey sites. That is, no vehicle was any more likely to be observed and/or interviewed than any other vehicle. Thus it is reasonable to conclude that the sample data should provide useful information about relationships for some broad community of drivers and passengers in each town.

However, caution should be exercised in interpreting the sample results as being representative of any particular population of drivers and passengers because there is no way in which the statistical reliability of the sample results can be established. The work required to generate statistically reliable estimates has been beyond the scope of this study.

Firstly, it would entail a definition of the population to be examined. A number of populations could have warranted examination. Populations of drivers and passengers could have defined according to, for example, vehicle type, occupants' age or sex, or occupants' income level, workforce or educational status. At each of the sites examined, sample weightings for the selected population characteristics would need to have been established by prior analysis.

Secondly, and for similar reasons, it cannot be adduced that the towns included in the survey are statistically representative of the range of capital cities, provincial and country towns throughout Australia. Judgement rather than statistical sampling was used to select the towns as well as the sites for the survey.

Given comments above about the broad representativeness of the survey data, the data should allow broad comparisons of seat belt wearing behaviour between town types in different States and between town types within a State. The aggregated State results should not be construed however as being representative of each State's seat belt wearing behaviour.

3.2 OBSERVED SEAT BELT WEARING BEHAVIOUR

3.2.1 Seat Belt Wearing: State

A total of 21,088 vehicle occupants were observed, comprising 7,849 in Queensland, 7,359 in South Australia and 5,880 in Western Australia.

In total, the proportion of occupants wearing seat belts (hereinafter referred to as SBW) equalled 79% (16,696 occupants).

SBW amongst vehicle occupants in Queensland was 75%, in South Australia 73% and in Western Australia 92%. (Refer Table 3.1)

SBW:	STATE,	TOWN

STATE	TOWN	SBW %
QLD	Capital (Brisbane)	81
	Provincial (Townsville)	72
	Country (Longreach)	71
	ALL	75
SA	Capital (Adelaide)	84
	Provincial (Port Pirie)	56
	Country (Clare)	64
	ALL	73
WA -	Capital (Perth)	89
	Provincial (Albany)	95
	Country (Merredin)	94
	ALL	92
ALL STATES	Capital	85
	Provincial	73
	Country	78
ALL TOWNS		79

3.2.2 Seat Belt Wearing: Town

Dverall, SBW is higher in capital cities (85%), followed by country towns (78%) and provincial cities (73%). (Refer Table 3.1)

Of the capital cities, SBW was 82% in Brisbane, 84% in Adelaide and 89% in Perth.

SBW varied considerably between the provincial cities. SBW was 72% in Townsville (QLD), 56% in Port Pirie (SA) and 95% in Albany (WA).

A wide variation in SBW was also recorded in the country towns. The recordings were 71% in Longreach (QLD), 64% in Clare (SA) and 94% in Merridin (WA).

3.2.3 Seat Belt Wearing: Seating Position

SBW is highest in the driver's seat (84%) compared with 80% in the front passenger's seat and 63% in the rear seat. (Refer Table 3.2)

The difference between SBW in the driver's seat and SBW in the rear seat is particularly striking in Queensland. (84% compared with 50%). With the exception of Clare (SA) this pattern is clearly discernible in each of the towns surveyed.

STATE	TOWN		POSITION I	N CAR	
			Front	Rear	
		Driver	Passenger	Passenger	ALL
		SBW %	SBW %	SBW %	SBW %
QLD	Brisbane	89	78	64	82
	Townsville	82	74	40	72
	Longreach	76	70	54	,71
	ALL	84	75	50	75
SA	Adelaide	89	86	65	84
	Port Pirie	60	55	36	56
	Clare	64	66	65	64
	ALL	76	75	61	73
WA	Perth	94	90	73	89
	Albany	95	94	93	95
	Merredin	97	93	89	94
	ALL	95	92	82	92
ALL STATES		84	80	63	79

TABLE 3.2 SBW: STATE, TOWN, POSITION IN CAR

3.2.4 Seat Belt Wearing: Age & Sex

Overall, SBW is highest in the 0<1, 30-49, and 50+ age groups for both males and females (Refer Table 3.3).

SBW is lowest in the 1-7 age group (males 66% and females 67%).

This general pattern is evident in Queensland and South Australia. In Western Australia, the 17-29 age group exhibits above average SBW rates for males and females in all age groups. SBW rates in Western Australia are also less widely spread across the age groups.

In Queensland and to a lesser extent in South Australia, SBW in the 1-7 and 8-16 age groups are somewhat lower than the respective age group averages.

TABLE 3.3

					STA	TE							
		QLD)		SA			WA			ALL		
SEX	М	F	ALL	М	F	ALL	Μ	M F ALL		MF		ALL	
	ader in die Parificiens eine maare				SBW	%							
Age													
0<1	74	83	80	85	74	79	86	89	87	82	81	82	
1-7	48	57	53	65	58	62	82	81	82	66	67	66	
8-16	62	53	58	59	60	60	88	88	88	67	67	68	
17-29	72	74	73	68	69	69	92	94	93	75	78	76	
30-49	83	87	85	78	82	80	94	95	95	84	88	86	
50+	83	90	86	77	84	80	95	95	95	84	89	86	
A11	75	77	76	73	75	74	92	92	92	79	81	80	

SBW: STATE, AGE, SEX

Over all States, only slightly higher proportions of females than males (81% compared with 79%) were observed wearing seat belts. Individual States exhibit a similar pattern. With some few exceptions (notably the younger age groups in Queensland and South Australia) the similarity of SBW for males and females appears across age groups and States.

3.2.5 Seat Belt Wearing: Type of Belt Fitted

SBW is highest in "other" types of belt (94%) including child seats, harnesses and basinettes. (Refer Table 3.4)

TABLE 3.4

AGE	ΤY	PE OF BELT	FITTED	
(Years)	Inertia Reel	Static	Other(a)	ALL
	SBW %	SBW %	SBW %	SBW
0 < 1	63	60	94	89
1 - 7	65	55	95	73
8 - 16	80	65	85(b)	74
17 - 29	83	68	50(b)	78
30 - 46	90	76	100(b)	87
50 +	90	80	100(b)	88

SBW: AGE, TYPE OF BELT FITTED

(a) Includes Child's Seats, Harnesses, Booster Seats, Basinettes and other types of restraint

(b) Sample sizes less than 20

Of the two major types of belt, SBW rate is highest for inertia reels (86%) compared with static belts (69%).

SBW rates generally increase with age for both the major types of belt.

3.2.6 Seat Belt Wearing: Vehicle Type

The variation in SBW rates between different types of vehicles is presented in Table 3.5.

The most significant features are that, for each vehicle type, passengers have a much lower SBW rate than do drivers and, for both drivers and passengers, SBW is much lower in commercial vehicles (utilities/vans) than in cars/station wagons or passenger vans.

TABLE 3.5

VEHICLE TYPE	POSITION IN CAR						
	Driver	Passenger	A1]				
	SBW %	SBW %	SBW %				
Car/Station Wagon	86	74	81				
Utility/Panel Van	73	60	69				
Van (3 rows of seating)	90	74	80				
ALI.	84	73	79				

SBW: VEHICLE TYPE, POSITION IN CAR

3.2.7 Seat Belt Wearing: Distance Travelled on Trip before Interview

SBW increases with distance travelled on the trip prior to interview, although a marginal decline is exhibited in the 7-14 km category. (Refer Table 3.6)

This pattern is evident for both drivers' and passengers' positions, but the decline in the 7-14 km range is more evident in the passengers' position.

TANCE		POSITION						
	Driver	Passenger	ALL					
КМ	SBW %	SBW %	SBW %					
1	77	64	73					
2	83	73	79					
3	88	74	82					
4-6	90	77	85					
7-14	89	75	83					
15+	91	82	87					
ALL	87	77	82					

SBW: DISTANCE TRAVELLED ON TRIP PRIOR TO INTERVIEW: POSITION IN CAR

3.2.8 Seat Belt Wearing: Day of Week and Time of Day

Between Monday and Thursday, SBW shows a tendency to decline until 4 p.m., and to increase between 4 p.m. and 10 p.m. (Refer Table 3.7)

On Fridays and Saturdays clear troughs occur between 10 a.m. and 1 p.m. and between 4 p.m. and 10 p.m.

On Sundays, SBW decreases strongly over the course of the day, such that between 4 p.m. and 10 p.m. SBW drops to 62% compared with 90% between 6 a.m. and 10 a.m.

DAY				
	6-10 am	10-12	1-3	4-10
	SBW%	SBW%	SBW%	SBW%
Monday	79	70	74	77
Tuesday	81	77	71	71
Wednesday	83	69	71	76
Thursday	85	72	69	74
Friday	86	71	77	66
Saturday	77	72	82	69
Sunday	90	78	70	62
A11	83	73	74	70

SBW: DAY OF WEEK AND TIME OF DAY

3.2.9 Seat Belt Wearing: Prevailing Weather Conditions

The pattern of association between variations in SBW and variations in weather conditions appears inconsistent.

The differences in SBW rates are not very pronounced and may be due to random variation. SBW declines as weather conditions worsen from "Fine" to "Heavy Rain" (80% and 75% respectively), but increases during "Storm" conditions (87%). Lower proportions of females than males wear seat belts during "heavy rain" or "storm" conditions, although the latter result may be a reflection of a relatively small sample size. (Refer Table 3.8)

WEATHER	SEX							
	Male	Female	A11					
	SBW %	SBW %	SBW %					
Fine	79	82	80					
Light Rain	79	80	80					
Heavy Rain	75	74	75					
Storm(a)	90	84	87					
ALL	79	81	79					

SBW: PREVAILING WEATHER CONDITIONS; SEX

(a) Small Sample Size

3.3 ATTITUDINAL DATA

Two categories of vehicle occupants were interviewed to determine, *inter alia*, their attitudes to seat belt wearing.

In vehicles in which at least one occupant was not wearing a seat belt, one non-wearer (driver or passenger) was asked to nominate the main reason for not wearing a seat belt. In vehicles in which all occupants were wearing a seat belt, drivers who said they sometimes left their seat belt undone were asked to nominate the main reason for doing so.

For analytical purposes this data has been cross-tabulated against three samples of vehicle occupants, namely :

Drivers wearing seat belts Drivers not wearing seat belts Passengers not wearing seat belts

The results are presented in Table 3.9

TABLE 3.9									
	MAIN REASON FOR NOT WEARING A								
SEAT BELT : DRIVERS WEARING SEAT									
B	ELTS, DRIVER	S NOT WEARING SEAT							
	BELTS, PASSE	NGERS NOT WEARING							
	SE	AT BELTS							
REASON		OCCUPANT TYPE							
	DWSB	DNWSB	PNWSB(a)						
	Z	%	or Io						
Ineffective	1	4	3						
Dangerous-Fire	1	2	*						
Dangerous-Drowning	*	1	*						
Uncomfortable	15	16	25						
Difficult to Do Up	*	1	4						
Hard on Clothing	*	*	1						
Forgets Belt	18	16	16						
Couldn't Be Bothered	9	19	16						
Travel Short Distance	e 33	24	13						
Belt Damaged	1	*	2						
Sick or Exempt	1	2	5						
Other	18	13	14						
TOTAL	00	100	100						

(a) Passengers 17 years of age and over.

* Less than 1.

In each of the three occupant samples, four main reasons account for most responses, namely : Uncomfortable, Forgets, Couldn't Be Bothered and Travel Short Distance. The following observations can be made about the relative importance of these responses in each of the three samples of occupants:

> Approximately equal proportions of drivers wearing and not wearing seat belts nominated Uncomfortable (15% and 16% respectively). By comparison, 25% of passengers not wearing seat belts nominated this reason;

Approximately equal proportions of respondents in each sample indicated that they forget to wear a seat belt;

Only 9% of drivers wearing seat belts said they sometimes couldn't be bothered. Drivers and passengers not wearing seat belts were twice as likely to nominate this reason (19% and 16%) respectively.

One third of drivers wearing seat belts who said they occasionally omitted to wear a belt nominated short distance as the reason. However, this reason was nominated by only 24% of drivers not wearing a seat belt at the time of interview and 13% of passengers not wearing a seat belt.

3.4 Socio-Economic Data

Socio-economic data were elicited from two samples of respondents: vehicle occupants not wearing a seat belt at the time of interview, who may have been either drivers or passengers; and drivers of vehicles in which all occupants were wearing a seat belt at the time of interview.

Socio-economic descriptors have been cross-tabulated by respondents' ages for the three samples of respondents, referred to in 3.3 above, namely

drivers wearing a seat belt at the time of interview;

drivers not wearing a seat belt at the time of interview;

passengers not wearing a seat belt at the time of interview.

To facilitate driver and passenger comparisons, the responses of passengers under 17 years of age have been excluded from the Tables.

3.4.1 Age and Household Income

Cross-tabulations of respondents' ages and household incomes are shown in Table 3.10 for each of the groups of respondents in the survey.

TABLE 3.10

AGE AND HOUSEHOLD INCOME : DRIVERS WEARING SEAT BELTS, DRIVERS NOT WEARING SEAT BELTS, PASSENGERS NOT WEARING SEAT BELTS

HOUSEHOLD INCOME

AGE/OCCUPANT TYPE

	1	.7-29	9		30-49	9		50 +	-	1	ALL.	
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a) (b) ((c)
	%	%	ak K	ay Xo	%	%	a k	%	ø	%	X	%
\$15,000	33	33	33	13	21	19	44	50	37	25	30	29
\$15,000 - \$30,000	53	59	53	53	59	53	35	37	44	50	57	52
\$30,000 +	15	8	14	33	20	28	21	12	19	24	13	19
ALL.	38	51	61	48	38	29	14	11	11	100	100	100

(a) Drivers Wearing Seat Belts

(b) Drivers Not Wearing Seat Belts

(c) Passengers Not Wearing Seat Belts

It can be seen from Table 3.10 that the sample of drivers wearing seat belts contains higher proportions of high income earners in each of the age groups examined than either of the samples of non-seat belt wearers. Of the two samples of non-seat belt wearers, the sample of passengers not wearing a seat belt contains the greater proportion of high income earners. This relationship holds across each age group. Data on age and educational status of each of the three samples of respondents are presented in Table 3.11.

TABLE 3.11 AGE AND EDUCATIONAL STATUS : DRIVERS WEARING SEAT BELTS, DRIVERS NOT WEARING SEAT BELTS, PASSENGERS NOT WEARING SEAT BELTS

EDUCATION

AGE/OCCUPANT TYPE

	1	17-2	9		30-49	9		50 ·	+		ALL	
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
	%	%	%	%	%	%	X	%	%	%	%	%
Not Completed Primary School	*	*	*	1	3	6	2	*	*	*	1	*
Completed Primary School	3	4	4	10	13	2	32	41	39	11	12	7
Completed 3 Years High School	36	44	50	39	47	47	32	29	33	37	43	48
Completed 5 or 6 Years High School	35	32	27	21	20	16	12	12	11	25	25	22
Comp leted Apprent ice- ship or Trade Certificate	13	14	11	13	10	18	10	10	6	12	12	12
Comp eted Universi ty or CAE Degree	13	5	8	16	. 7	10	11	7	11	14	6	9
ALL	38	49	60	48	38	29	14	12	10	100	100	100

* less than 1

(a) Drivers Wearing Seat Belts

(b) Drivers Not Wearing Seat Belts

(c) Passengers Not Wearing Seat Belts

It can be seen from Table 3.11 that in each of the age groups, the sample of drivers wearing seat belts contains the highest proportion of respondents having completed either five or six years of high school, an apprenticeship or trade course or a university or CAE degree.

3.4.3 Age and Occupation

Table 3.12 presents a breakdown of age and occupational data for each of the three samples of vehicle occupants.

	Ą	GE AN EAT E BEL	D OCCL ELTS, TS, PA	D OCCUPATION : DRIVERS WEARING LTS, DRIVERS NOT WEARING SEAT TS, PASSENGERS NOT WEARING SEAT BELTS								
OCCUPATION	AGE/OCCUPANT TYPE											
] (a) ≸	.7-29 (b) %	(c) X	(a) X	80-49 (b) X	(c) X	(a) X	50 + (b) X	(c) *	(a) X	ALL (b) X	(c) \$
Professional, Technical, Etc	18	6	11	24	11	20	11	14	6	20	9	13
Clerical	11	6	5	9	9	6	3	*	*	8	7	5
Sales, Service, Sport, Recreation	16	14	11	17	12	4	6	3	6	15	12	8
Farmers, Fishermen, Etc	5	3	6	7	7	4	8	2	6	6	5	5
Tradesmen, Production- Process Workers, Drivers & Labourers	27	37	30	24	31	34	17	31	11	24	34	29
Students	6	5	8	*	1	2	*	*	*	2	3	5
Home Duties	10	11	8	13	17	18	9	10	11	11	14	11
Unemployed	5	12	14	2	4	6	*	*	*	3	7	10
Retired or Pensioner	*	1	3	2	3	2	43	34	56	7	6	8
Other Occupations	2	3	5	4	4	4	2	5	6	Э	4	5
ALL	38	49	60	48	39	30	14	12	11	100	100	100

* Less than 1
(a) Drivers Wearing Seat Belts
(b) Drivers Not Wearing Seat Belts
(c) Passengers Not Wearing Seat Belts

A number of clear trends emerge from an examination of the age and occupation data. Firstly, the sample of drivers wearing seat belts contains a higher proportion of "white collar" workers (professional, technical, clerical, sales, service, etc.) overall, and within each of the three age groups. Over all age groups the proportions of white collar workers (as defined here) are 43% of drivers wearing seat belts, 28% of drivers not wearing seat belts, and 26% of passengers not wearing seat belts.

Except in the 30-49 age group "blue collar" workers tradesmen, production-process workers, drivers and labourers - are most frequently represented in the sample of drivers not wearing seat belts. In the 30-49 age group the representation of blue collar workers in each of the two samples of non-seat belt wearers is nearly equal.

3.4.4 Age and Sex

SEX

Table 3.13 shows the age and sex of respondents in each of the three samples of vehicle occupants.

TABLE 3.13	
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AGE AND SEX : DRIVERS WEARING SEAT BELTS, DRIVERS NOT WEARING SEAT BELTS, PASSENGERS NOT WEARING SEAT BELTS

AGE/OCCUPANT TYPE

	1	7-29)		30-4	49		50-	ŀ		ALL		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	
	%	%	%	%	%	oy No	ay X	%	%	%	%	%	
Male	62	68	45	71	66	43	80	81	39	69	69	44	
Female	38	32	55	29	34	57	20	19	61	31	31	56	
ALL	37	46	60	49	41	30	14	13	10	100	100	100	

(a) Drivers Wearing Seat Belts

(b) Drivers Not Wearing Seat Belts

(c) Passengers Not Wearing Seat Belts

In the two younger age groups in Table 3.14 the representation of males and females in each of the samples is similar to their representation in the samples as a whole. In the 50+ age group, however, males are over-represented as drivers, and under-represented as passengers.

4. CONCLUSIONS

Study data has been derived from approximately 21,000 observations of vehicle occupants and approximately 4,300 interviews with vehicle occupants in Queensland, South Australia and Western Australia.

The study has found considerable variability in seat belt wearing between the sampled towns in the three States. In particular seat belt wearing in the Western Australian sample is some 16 per cent above the average of the three States investigated, and nearly 25 per cent above the rates observed in Queensland and South Australia. The report urges caution in the interpretation of this result and suggests that given the nature of the sampling procedure adopted, inter-state comparisons cannot readily be made.

Of relevance in this regard are comparisons which can be drawn between the results of this study and those of the earlier Ove Arup Study. The results of the two studies are similar in the respective South Australian samples, with SBW of 73 per cent being found in the current study, and 72 per cent in that of Ove Arup. Such similarity does not exist for the Western Australian samples. Whereas the current study reported seat belt wearing in Albany to be 94 per cent, the Ove Arup data for Northam shows a seat belt wearing rate of 82 per cent.

The present study has found that SBW is highly sensitive to occupants' positions in the vehicle in descending order from the driver's seat, to front passenger's seat and rear seat. The largest dispersion in SBW between position was found in Queensland and South Australia. Clare (SA) recorded the lowest SBW overall of 35.7% in the rear seat. However, this apparent significance of position may be more a reflection of occupant's ages with position appearing significant because of the tendency of persons in various age groups to sit in particular positions.

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In all States, seat belt wearing increases with age from age groups 8-16 years onwards and is highest in the 50+ age group.

Females were found to be more likely to wear seat belt than males but the difference was small.

Of the two major belt type categories, seat belt wearing is highest when inertia reels are fitted. **Comparing three categories of** restraint however (inertia reels, static belts and other restraints) seat belt wearing is highest for other restraints due to relatively high usage of these restraints amongst children in the 0-1 and 1-7 age groups.

Of the three vehicle types considered, cars/station wagons and vans with three rows of seating were observed to have similar SBW (81% and 80% respectively). Markedly lower SBW was reported in utilities/panel vans (69%).

Seat belt wearing generally increases with distance travelled on the trip prior to interview except for a slight decline in the 7-14 km range. Interestingly, Pederson and Mahon (1983) found a tendency for SBW to increase up to the 4-9 km range and to decline thereafter. Less discernible patterns were evident in the Ove Arup results.

The present study found some variation in SBW by time of day and day of week. Variations by time of day are most evident with SBW being highest in the morning and lowest from late afternoon onwards.

Attitudes to non-seat belt wearing fall consistently into four categories: "short distance"; "couldn't be bothered"; "uncomfortable"; and "forgets belt".

Evident in the sample data was a tendency for drivers who were wearing seat belts to have higher levels of both educational achievement and household income than drivers not wearing seat belts and passengers not wearing seat belts. Drivers who were wearing seat belts were more likely to be employed in "white collar" occupational groupings.

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Given study constraints with respect to the generation of data, the Consultants believe that the data base should be interpreted with some care. While every attempt has been made to select interview sites giving a representative distribution of short and long distance driving, and as far as possible, to randomise observations and interviews, the Consultants emphasise that the data have not been derived from scientifically designed samples. In the Consultant's view, derivation of statistically valid samples for a study of this type would be an exercise of some complexity.

5. RECOMMENDATIONS

TITLE	RECOMMENDATION NUMBER	RECOMMENDATION
Use of service stations as interview sites, Page 8	1	Service stations should be used as interview sites in future studies of this type. Notwithstanding the difficulties inherent in using sites of this type - e.g. the need to ensure that survey activities do not disrupt the proprietor's business - service stations are workable locations and are likely to yield more representative samples of motor vehicle occupants than other sites proposed in previous studies.

- Department of Transport, Federal Office of Road Safety (1985) "Specification for Research Project 85R3.1 Survey of Occupant Restraint".
- Ove Arup & Partners (1986) "Feasibility Study for a Survey of Occupant Restraint in Rural Areas". Prepared for the Federal Office of Road Safety.
- Pederson D.G. and Mahon H.C. (1983) "Seat Belt Wearing in the Canberra Region - Observation of Occupants and Interviews with Driver". Anutech Pty. Ltd. Prepared for the Federal Office of Road Safety.

SAS Institute Inc "Statistics Version 5 edition".

Schnerring F. (1983) "Surveys of Seat Belt Wearing in New South Wales, 1970 to 1981" Traffic Accident Research Unit Publication RN 5/83, NSW Department of Motor Transport, cited in Pederson and Mahon (1986).



F.O.R.S. OCCUPANT RESTRAINT SURVEY

Cameron MCNamara

Cards to be shown or used as prompt to Respondent for Questions 4,5 & 7

Q4 R	ANGES of DISTANC	E driven in 1 YEAR	
K	ILOMETRES	RANGE	MILES
0 1 1 1	0 000	1 2 3	0 to 5 000 to 10 000
t 3 t 6	5000	4 5 6	to 20 000 to 40 000 above
Q5 P	ROPORTION of HIG	HWAY Driving (outside of ci	ties & towns)
P	roportion	Range	
0 t 5 t	11 .0 1 1 .0	1	
2 t 5 t	251	3	
7 t 9 t 1	25%		
Q7 M	AIN REASON for N	OT wearing SEAT BELT	194
C	HOOSE ONE-		
BELT is co	onsidered:	or PERSON:	or:
1. INEFFEC	TIVE	7. FORGETS belt	10. Belt DAMAGED
2. Dangero	ous - FIRE	8. Couldn't be BOTHERED	11. SICK or EXEMPT
3. Dangero	ous - DROWNING	9. Will drive SHORT DISTAN	ICE 12. Other
4. UNCOMFO	RTABLE		
5. DIFFICU	JLT to do up		
6. Hard of	CLOTHING		

Cameron MCNamara

FORS OCCUPANT RESTRAINT SURVEY

Cards to be Shown to Respondent for Questions 9,10 and 11 of the Interview

Q.9	OCCUPATION GROUP
1.	Professional, technical, etc.
2.	Clerical
3.	Sales, service, sport and recreation
4.	Farmers, fishermen, etc.
5.	Tradesmen, production-process workers, drivers and labourers
6.	Student
7.	Home duties
8.	Unemployed
9,	Retired or pensioner
10.	Other occupations

_		
	Q.10	LEVEL OF EDUCATION
	Level 1	Not completed Primary School
	Level 2	Completed Primary School
	Level 3	Completed three years of High School
	Level 4	Completed five or six year of High School
	Level 5	Completed Apprenticeship or Trade Certificate
	Level 6	Completed University or C.A.E. Degree

Q.11	ANNUAL HOUSEHOLD INCOME
1.	Less than \$15,000
2.	\$15,000 - \$30,000
3.	More than \$30,000

				IN CONFIDENCE
			FORS OCCUPANT RESTRAINT SURVEY - CENTRE	DAY (of week)
Т		_	METHOD OF HOUR OF DAY OBSERVATION SURVEY VEHICLE TYPE 1. Car/Station Va VEHICLE TYPE 2. Ute/Panel Van	NUMBER gon (2 rows of seats) (3 row) 3. Van with 3 rows
OBSERVE	-	thir sea secon sea firs sea	BELT TYPE Wcc. seet: SEX 1. Inertia Reel 1. Male 2. Static 2. Female 3. None 4. Child's Seat 4. Child's Seat 4. 17 - 29 5. Harness 5. 30 - 49 6. Booster Seat 6. 50 + 7. Basinette / App. 6. 50 + 1. How long have you held a car driver's licence?	NURSED CHILDREN Enter Age group of child: 1. 0 - 6 aths 2. 6 aths - 1yr 3. 1 - 2yrs 4. 2 - 5yrs 5. 5yrs + YEARS KM TO HERE
	DRIVER		 to get here?km/miles 3. How far do you expect to drive in total today?km/mile 4. How far do you drive in one year? (from ranges on card) 5. What proportion of your total driving per year is highway driving, outside of towns or cities? 	ES KM TODAY
		INT	 (from ranges on card) ERVIEWER 1. Full Seat Belt Car 2. Non-seat Belt Car . 6. When you are travelling in a car, do you sometimes leave your seat belt undone?. 	SEAT NO. Won- belt INTERVIEWEE wearers only
IEW	BELT WEARER	AR	1. Only if no belt to wear 2. No 3. Yes 7. (only ask if Yes in Q6) When you don't wear a seat belt, is your main reason for not wearing it? (Choose one alter Belt is 1. INEFFECTIVE 2. dangerous-FIRE Belt is 1. INEFFECTIVE 2. dangerous-FIRE	BELT USE L] what native)
INTERV		AT BELT C	considered 3. dangerous-DROWNING 4. ORCORDORTABLE S. DIFFICULT to do up 6. hard on CLOTHIN Person 7. FORGETS belt 8. couldn't be BOT 9. will travel SHORT DISTANCE 9. will travel SHORT DISTANCE ar 10. belt DAMAGED 11. SICK or EXEMP1 12. Other	
	SEAT	SE	8. Where do you live? (Postcode)	
	NON	FULL	9. What is your occupation <i>(group if possible)</i>	
	ted N	IVER	10. What level of education have you reached so far? Level 1 - Not completed Primary School	EDUCATION .
	a selec	or DR	Level 2 - Completed Primary School Level 3 - Completed three years of High School Level 4 - Completed five or six years of High School Level 5 - Completed Apprenticeship or Trade Certificate Level 6 - Completed University or C. A. E. Degree	
			11. Into which group below does your household income fall?1. Less than \$15,0002. \$15,000 - \$30,000	
			3. More than \$30,000	
	INTER-	VIEWER	12. Has the person been drinking? 1. Yes 2. Maybe 3. No	
		-	- 38-	