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Title and Subtitle: Attitude survey of truck drivers and operators

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Abstract: As part of an evaluation of a national increase in the heavy vehicle speed limit to 90 km/h from 1 January 1987, an attitude survey of 453 drivers and 90 operators of heavy vehicles was undertaken in New South Wales, Victoria and Queensland in June and July 1987. Current speed of travel is around 100 km/h and is influenced by route based factors rather than speed limit. A heavy vehicle speed limit of 100 km/h is preferred, for safety reasons.

KEYWORDS: Heavy Vehicle Safety Speed Attitude Survey Surveys Speed Limit

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ATTITUDE SURVEY OF TRUCK DRIVERS *AND* OPERATORS

Report

Prepared for

The Federal Office of Road Safety, Canberra

by

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EXECUTIVE SUMMARY

I INTRODUCTION

* The study involved a survey of truck drivers and truck operators in NSW, Victoria and Queensland. The study investigated both groups' attitudes to truck driving, variables influencing speed of travel and to preferred truck speed limit. Also assessed was the influence of truck speed limit on speed of travel.

* The aim was to assess the safety benefits or disbenefits of recent increases in the speed limit in Victoria and NSW from 80 to 90 km/h. The results will also relate to future policy decisions about a further increase to 100 km/h.

II SURVEY OF TRUCK DRIVERS

Section 1 - Methodology

* 453 face to face interviews were carried out with truck drivers selected at roadside restaurants on randomly selected routes.

* Drivers were stratified into two experimental conditions: 112 surveyed on the two routes in Queensland where the speed limit has remained unchanged at 90 km/h (the 90 km/h group); 341 surveyed on two routes in NSW and Victoria where the speed limit was increased from 80 km/h to 90 km/h on 1 January, 1987 (the 80-90 km/h group).

* Interview was by standardized questionnaire. The validity and reliability of the instrument was checked by trialling and piloting. The trial was conducted on 15 respondents. The pilot included 30 interviews.

* Sampling was designed to obtain opinions relevant to the two different experimental conditions. To support this the questionnaire was designed to elicit responses on route based questions.

* A response rate of 99.56% was achieved.

Section 2 - Demographics

* Drivers of a wide range of age and experience characteristics participated. The majority of drivers were aged 26-40 years, had 10-25 years driving experience and 5-20 years experience driving their truck. Most were fulltime, licensed to drive an articulated vehicle and drove semitrailers of 11-20 tonne tare weight and 21-40 tonne carrying capacity, and were carrying 16-25 tonne loads. The majority travelled up to 6,000 km/week and 400,000 km/year, up to four legs per week and were

currently on 10–11 hour stints. Of all drivers, 40% were owner drivers.

* Tests for differences in the demographic characteristics of the two experimental groups were predominantly insignificant or unremarkable. Two exceptions were observed. However, these two between group differences were required by the design of the study which aimed to access responses from the two defined experimental groups.

75.4% of the 80-90 km/h drivers drove interstate registered trucks, compared with 57.7% of the 90 kmlh drivers. 90.5% of the 80-90 km/h drivers were taking interstate journeys, while only 61.8% of the 90 km/h group were driving interstate.

These findings indicated the appropriateness of the methodology and sampling strategy used.

Section 3 - Speed Preferences

* Drivers preferred to travel around 100 km/h. For both day and night travel drivers preferred to travel at a speed of 96-100 km/h; (Daytime 59%, Night time 45.4%). Considerable proportions, however, preferred to travel at 101-110 km/h (Daytime (18.5%). Night time (30%)).

* Experience influenced preferred speed of travel at night. Drivers of 20-25 and 35-40 years experience tended to be less varied in their choice of speed at night. Of the 20-25 year experienced drivers 60.0%, and 88.9% of those with 35-40 years experience, indicated a preference for 96-100 km/h. This is compared to the overall average Of 45.4%.

* Drivers travelling between 300,000 and 500,000 km per year reported more varied speeds of travel than those completing lower or higher distances. An average of 33.3% and 29.1% of these drivers travelled 96-100 kmlh during the day and night, respectively. This is compared to an average of 56.8% and 49.6% for other drivers.

* Employee drivers travelled at slightly higher speeds during the day. Most owner operators travelled at 91-100 km/h (76.9%) while most employed drivers travelled between 96-105 km/h (72.5%).

* The majority of both experimental groups travelled at 96-100 km/h. However, the speed of the 90 kmlh group was more variable than the 80-90 km/h group. During both day and night the 90 km/h drivers were more likely to report travelling at slower than average speeds and faster than average speeds.

* A finding of considerable importance to the study was that speed of travel was also related to route of travel.

Drivers on the Warrego Highway travelled at higher speed (41.1% at 101-110 km/h) than those on the other three routes (61.4% route 1, 55.2% route 2, 49.1% route 3 at 96-100 km/h).

* The 81 drivers who travelled on the Eyre highway reported highly variable speed of travel with proportions between 13% and 21% reporting speeds between 96-100 km/h to 116-120 km/h.

* Overall, the majority of drivers had not increased or decreased their speed of travel nor had they felt that they had to increase their speed to meet their schedules or to be competitive. Reports of slight increases by some drivers were significantly related to both experimental group and to route, also suggesting that the recent change in the speed limit (experimental group differences) was not the dominant factor influencing increased speed. Route based factors, regardless of speed limit, were also of relevance.

* Owner drivers were far less likely to have increased their speed of travel (23.3% Owner drivers; 39.1% Employed drivers).

* 82% of drivers want a speed limit of 100 km/h. Preference was significantly related to both experimental group and route, suggesting that route based factors as well as current speed limit and recency of change influenced drivers' opinions.

Section 4 - Factors contributing to speed decisions

The factors considered to be important when making decisions about speed of travel were similar for day and night time travel. Weather conditions, density of traffic and the potential for being detected exceeding the speed limit were the drivers' first three considerations. Weather was mentioned most often, especially at night.

* Detection of speeding was given as the most important consideration most often for daytime travel. Speed limit was mentioned as a consideration only in this context of enforcement.

* Significant differences between the two experimental groups were found for factors related to the routes of travel i.e. traffic flow, road conditions etc.

* Driver fatigue and alertness and physical well-being were rated as being of considerably more importance for night time travel.

Section 5 - Speed Dispersion

* The majority of drivers agreed that speed dispersion was dangerous and that the danger involved cars trying to overtake slower trucks. In addition, drivers indicated

that they did not alter their speed of travel when travelling with cars. It would seem that drivers do not approve of different speed limits for trucks and other vehicles and choose to travel at 100 km/h, thus eliminating the perceived danger.

Section 6 - Convoys

* Truck drivers, in general, support travel in convoys. Convoy travel is seen as safer when speed differences are eliminated. However, as most drivers report that they do not alter their speed when travelling on convoys and that they currently drive at 100 km/h, the official elimination of speed limit differences may not, in effect, alter current convoy travel behaviour. Further study and education is suggested.

Section I - Road Crashes

* Speeding was not perceived to be a factor in road crashes. The two most frequently given reasons for road crashes reported by truck drivers both concerned car drivers and the relationship of car driving to truck driving needs. Impatient, unskilled or inexperienced car drivers and cars overtaking or cutting in front were cited most frequently.

* Factors attributable to both car and truck drivers, such as lack of driver education/ignorance, inexperience and fatigue were the third, fourth, fifth most frequently mentioned causes. Weather and road conditions were seen as the next most important factors. Trucks and truck drivers alone, including truck driver fatigue, were not considered to be common causes of crashes.

Section 8 - Multiple Regression

* Using a logistic regression modelling technique, the variables found to best predict the speed limit at which drivers preferred to travel were daytime speed of travel and the four survey routes.

* In accordance with the evidence of Section 3, preferred speed limit was not predicted by experimental group, that is current or recently changed speed limit. It was predicted by current speed of travel on a given route. Drivers who drive faster on a given route want a higher speed limit.

* There is no evidence in this study that current speed or preferred speed limit is substantially influenced by the current speed limit.

III STUDY OF OPERATORS

* 90 Truck Operators were surveyed; 30 from NSW and 30 from Victoria where the speed limit had increased from 80 to 90 km/h on 1 January 1987, the 80-90 km/h group, and 30 from Queensland where the speed limit had remained at 90 km/h, the 90 km/h group. Operators were randomly sampled from the Heavy Carriers category of telephone listings. The respondent was a person identified by the General Manager/Manager to be involved in the setting of schedules.

* Interviews were carried out by telephone according to a standardized questionnaire developed and piloted on 13 respondents. This questionnaire also used a "route-based'' approach to ensure that the responses obtained were relevant to the two experimental conditions. An 80% response rate was achieved.

* The majority of Operators owned up to 20 trucks, employed subcontractors and carried a variety of freight. Most of the respondents were directly responsible for the setting of schedules and had been interstate truck drivers. Most companies contracted predominantly within state work. These characteristics were similar for both experimental groups.

* The evidence did not suggest that operators responded to recently increased speed limits by tightening travel schedules. It does suggest that factors other than speed limits are influencing the operators' behaviour. This was also the opinion of the drivers. Operators from both experimental groups indicated that they did not set fixed and time-limited schedules, that the drivers had more than enough time to reach their destinations and did not now travel at greater speeds than last year. The majority would not tighten their schedules with an increase in'the limit to 100 km/h.

* Neither experimental group had revised schedules since last year. Very few agreed that they now expected drivers to reach their destinations more quickly. Indeed, contrary to expectations, of those who did now expect their drivers to travel more quickly more were from the 90 km/h group.

* The speed at which trucks travel is more driver related than operator related.

* Most operators would prefer a truck speed limit that is the same as the car speed limit.

IV CONCLUSION

* The study design and methodology was a considerable success. A 99.56% response rate and acceptable standard errors of response support confident acceptance of the following major outcomes:

* Truck drivers travel and would prefer a speed limit of 100 km/h. This is supported by operators.

* In general there was no evidence that speed limit or a recent increase in speed limit was a major determinant of drivers' speed of travel nor the cause of crashes. The evidence suggested that factors associated with given routes of travel are more important.

I. INTRODUCTION

SECTION 1. BACKGROUND TO STUDY.

Assessment of truck driver behaviour and driving hazards have identified a series of characteristics, situations and issues that may have relevance to the truck driving situation and contribute to crashes involving trucks. Driver fatigue, alcohol and drugs, truck mechanical and design features, road conditions, the influence of other traffic, economic and emotional pressures and interactions between these and other variables have been, and are still under investigation.

A major factor of concern to road safety is speed. In an extensive literature review Linklater (1977) noted that Solomon (1964) found trucks to have the lowest mean speed of all the vehicle types studied. However, his data suggested that the influence of speed on road truck accidents was evidenced more clearly when truck speed was viewed in relation to overall traffic speed. His data suggested that the greater the variation in speed of the vehicle concerned from the average speed of surrounding travel (that is, the greater the speed dispersion) the greater the probability of that vehicle being involved in a traffic crash (Linklater 1977).

In addition to the study of driver, truck, road and speed characteristics that may contribute to truck accidents, recent studies have emphasized the influence of driver perceptions and attitudinal variables on driver safety. Truck drivers differ from other motorists in their life styles and attitudes towards other classes of road users. Variables such as driving speed should be considered in relation to the influence of driver attitudes, motivations, social contacts and economic, physical and emotional pressures. Most importantly, survey results suggest that truck drivers expressed a desire for greater involvement in the decision making processes affecting their industry and that such involvement should improve understanding of drivers' safety needs and improved acceptance of the resulting regulations and policies. (Linklater, 1977; Road Freight Transport Industry Council, 1984).

As a result of concern that speed limit differences may contribute to crashes and as part of an agreed "fast track" package of road transport industry reform, ATAC Ministers agreed to increase truck speed limits to 90km/h on 1 January, 1987 in those States where a lower limit previously applied. This reduced the speed differential between trucks and other road traffic to 10 kmlh. It was proposed that, if no adverse effects of increased truck speed limits on truck travel and road safety are identified, the truck speed limit in Australia would be further increased to 100 kmlh.

As part of the assessment of the impact of increased truck speed limits on road safety a survey of truck drivers' and truck operators' attitudes to speed, driving conditions and the increase in the speed limit was carried out by SIROMATH Pty. Ltd. for the FEDERAL OFFICE OF ROAD SAFETY (FORS). The aim of the survey was to examine the influence of speed limits on travel speed and safety by assessing the factors which truck drivers believe influence the speeds at which they travel, and which influence their attitudes towards driving and safety.

FORS commissioned a study comparing the opinions and attitudes of drivers operating in States where the truck speed limit was raised to 90 kmlh with those in Queensland where that limit was already in force. In view of the evidence of past research it was considered that this would provide valuable data for policy decisions pertaining to truck speed limits and road safety.

The study undertaken by SIROMATH consisted of two phases:

1. A survey of truck drivers and owner drivers travelling along:

a. the Hume Highway from Victoria to NSW and the Western Highway from Victoria to South Australia, on which the maximum legal speed limit was increased from 80 to 90 kmlh on 1 January, 1987, and:

b. the Bruce Highway and the Ipswich Road/Warrego Highway in Queensland on which the speed limit was already 90 km/h.

2. A survey of freight/transport truck operators in New South Wales and Victoria where the legal speed limits had been increased, and in Queensland where they had not altered.

SECTION 2. OBJECTIVES OF THE STUDY

The detailed objectives of the study were as follows:

1. To assess truck drivers' perceptions of their speed of travel when driving on "open roads". To assess if drivers perceive that they have altered their speed when travelling in areas in which the speed limit was increased on 1 January, 1987.

2. To examine whether current speed of travel is due to the introduction of the new speed limit on 1 January, 1987 by:

   a. assessing the influence of speed limit on the speed at which drivers travel,

   b. assessing if perceived changes in speed of travel are associated only with routes on which the speed limit has been raised.

3. To determine the influence of other variables on truck drivers' decisions about their speed of travel including:

   a. traffic stream density
   b. vehicle size and load
   c. driver characteristics - experience/fatigue
   d. probability of detection by police.

4. To assess truck drivers' attitudes to convoying and their influence on truck speed of travel and speed limits.

5. To determine if drivers perceive a change in the expectations and schedules of their operators and if owner/drivers perceive a change in their own expectations since 1 January, 1987.

6. To determine if operators consider that a change in their expectations and scheduling has occurred since 1 January, 1987.

7. To determine truck drivers' attitudes to the current speed limits.

II STUDY OF TRUCK DRIVERS

SECTION 1. METHODOLOGY

1.1 SAMPLE FRAME

1.11 Sample size

The study involved the conduct of 453 face to face interviews with truck drivers at roadside restaurants.

Two groups of truck drivers were surveyed under two different experimental conditions.

1) 112 drivers were surveyed travelling within Queensland where the speed limit has remained unchanged at 90km/h over the last year. This group will be referred to as the 90km/h group throughout this report.

2) 341 drivers were surveyed travelling through NSW and Victoria where the speed limit was increased from 80km/h to 90km/h on 1 January 1987. This experimental group will be referred to as the 80-90km/h group throughout the report.

The sample sizes for the two different experimental conditions were selected according to square root proportionality of freight movements through these areas.

1.12 Sampling procedure.

A prestratified random sampling design with prestratification of the population by truck route, random selection of restaurants along selected routes and random selection of days and times of interviewing in relative proportion to the frequency of use was used for the study.

In order to access a representative sample of drivers, Queensland and the Eastern States were stratified by major truck routes along which most freight travels. Routes along which the study was to take place were then randomly selected. For the experimental condition within

Queensland the Bruce Highway running North of Brisbane was randomly selected for surveying. However problems were encountered surveying truck drivers at roadside restaurants along this route due to restaurant boycotts by the drivers and freight seasonality. To overcome these problems another route was selected running South West from Brisbane, the Warrego Highway, after consultations with the Federal Office of Road Safety.

For the experimental condition within the Eastern States the routes selected for the survey were the Hume Highway running between Sydney and Melbourne and the Western highway between Melbourne and Adelaide.

Roadside restaurants were initially identified as the most appropriate kind of interview site for access to the truck drivers. The Restaurants were randomly selected from a list provided by the Federal Office of Road Safety. Only one roadside restaurant per route was selected. However for Queensland the problems previously mentioned required a less random selection of roadside restaurant, with three restaurants surveyed overall .

The procedure used to select the days and times of interviewing was designed to sample road users over a 24 hour period, I days a week. The roadside restaurants used were all open 24 hours a day. In general, this 24 hour period can be divided into a "busy" period between 4 p.m. and 4 a.m. and a "slow period" between 4 a.m. and 4 p.m. During piloting it was determined that there were six times as many users in the busy times as in the slow times. Eight hour shifts were randomly selected from "busy" and "slow" periods in proportion to the number of drivers using the restaurants during these periods across all days of the week for each experimental group.

The procedure used to select truck drivers for participation in the survey was to interview them in the order in which they entered the restaurant. The interviewers noted the order in which the drivers entered and, after completing one interview, would proceed to the driver who had next entered the restaurant after the driver just interviewed. If the driver immediately following the driver just interviewed had already left the restaurant then the driver who had immediately

followed that person would be selected. This procedure was adopted after piloting. (Refer Section 1.3).

1.2 SURVEY PROCEDURE

For the main survey interviews were conducted at roadside restaurants at the following locations. Number of completed interviews by location are also shown.

Queensland	- Brlsbane	82
	- Gympie	30
Eastern States	- Gundagai, NSW	209
	- Borsham, VIC	132

Permission to interview truck drivers in the restaurants selected was first obtained from the managers/owners. A Siromath representative contacted the manager/owner by telephone to explain the aim of the survey and who had commissioned it. Notification of the times and days of the interviews and confirmation of the arrangements were then forwarded by letter.

The interviewers also introduced themselves to the manager/owner or their representative before interviewing and informed them when the survey was completed. A letter of thanks was sent after the survey.

Eleven interviewers (three male and nine female) were used for the interviews. They were subcontracted from the field management company Nanette Dykes. Each interviewer was extensively briefed both by a Siromath and a Nanette Dykes field supervisor and each interviewer's work subjected to a 10% audit.

The drivers were approached when seated at a table in the restaurant. The interviewers first of all identified the respondent as a truck driver. They then identified themselves, explained the aims of the survey, and asked the driver if he would be interested in giving ten minutes of his time to complete the questionnaire. The drivers were told that the survey was being undertaken for the Federal Office of Road Safety and that it was about travel speeds and driving conditions. The

procedure for contact used by the interviewers was detailed in the "Interviewers Instructions" included in Appendix 4.

The approach was at all times friendly and casual. Interviewers had at hand general information about the Federal Office of Road Safety, Siromath, and Nanette Dykes, and a letter of identification (see Appendix 2) should the driver request to see such.

The respondents were assured of complete anonymity and the complete confidentiality of their answers, and were encouraged to use this medium to express their true views.

The guidelines used for approaching truck drivers are included in Appendix 3 and instructions to interviewers on the use of the questionnaire in Appendix 4.

The mean interview length was 15 minutes. Interviewing was extremely successful with an overall response rate of over 99.56% achieved. The truck drivers who responded were in general those who, when approached, had just about finished their meal and were getting ready to leave the restaurant. No driver was found to be totally unwilling to participate. One driver, pressed for time, failed to complete the interview. One driver was unsure about participating. No reason was given.

Interviewing took place during the period 10 June - 2 July, 1987.

1.3 QUESTIONNAIRE DESIGN, TRIAL AND PILOT

Questionnaires were designed by SIROMATH in cooperation with FORS representatives and were subject to considerable review and validation by trialling and piloting.

The questionnaire was first trialled to verify relevance, salience and interpretation of questionnaire items to truck drivers. This maximized its reliability and construct validity.

To obtain opinions relevant to the two different experimental conditions the questionnaire was designed to elicit responses on route based questions; that is, drivers were asked to describe their driving behaviour on their current route of travel. This procedure complemented the sampling strategy. This procedure also ensured that current behaviour and salient attitudes were accessed and eliminated retrospective data. All of these issues were carefully considered in the questionnaire design. Questionnaire items were presented in both Likert scaled, open and coded formats.

Questionnaires used in the survey of both truck drivers and operators are included in Appendices 1 and 8.

1.31 Trial

The trial was conducted by face to face interviews on a sample of 15 truck drivers at Truck City, a large roadhouse/service station/truck repair complex on the outskirts of Melbourne.

The trial resulted in a number of changes to definitions and wordings of the questionaire as well as substitution and deletion of certain questions.

1.32 Pilot Study.

The modified questionnaire was then subjected to a pilot study which took place over two days at a roadside restaurant on the Hume Highway at Albury, N.S.W. Two experienced interviewers were used, one from SIROMATH and one from the field management company Nanette Dykes. Thirty completed face to face interviews were obtained. The Pilot Study assessed both questionaire design and the proposed Methodology.

The method of approaching the manager of the restaurant by phone with a follow up letter resulted in good cooperation. The survey procedure was found to be acceptable in accordance with rigorous experimental design and viable for surveying a population which was constantly moving and not available for study except at in transit localities.

The Pilot Study in particular assessed the method of driver selection. Systematic sampling of every i^{th} driver entering the restaurant proved difficult due to the number of drivers entering and leaving. A modified technique was therefore used whereby the interviewers observed the order in which truck drivers entered the restaurant after the person they were interviewing. On completing the interview the next driver who was still in the restaurant was selected.

Extremely high response rates, as in the trial, were obtained in the Pilot Study. Only two drivers refused and these were both about to leave the restaurant after completion of their meals. This effectively means that the integrity of the data obtained would not be compromised by non response bias.

Inter-rater reliability of questionaire presentation was also assessed in the Pilot Study. There was no evidence of a variation in the drivers' responses associated with the interviews. As well, observation in the Pilot Study suggested that there was very little variation in the use of the questionnaire even when minimal training was provided.

1.4 SAMPLE SIZE

The survey was undertaken on a random sample of 450 truck drivers. In general the survey results are presented as the proportion of population elements that belong to a defined classification or possess a defined attribute. Given the presentation of results in a sequence of proportions then the usual formula of variance can be computed by a simple procedure from the sample proportion p, sampling fraction f and the sample size n:

$$\text{var}(p) = (1 - f)\,\frac{p(1 - p)}{n - 1}$$

and the standard error:

$$\text{se}(p) = \sqrt{\text{var}(p)} = \sqrt{(1 - f)\,\frac{p(1 - p)}{en - 1}}$$

Based on Australian Bureau of Statistics (ABS) estimates of road freight transport activity the sample of 450 truck drivers is less than 5% of the total population that comes within the scope of this survey.

As the factor (1 - f) is unimportant when the sampling fraction is less than 5% the formula can be simplified to:

$$Se\ (p) = p\ \frac{(1 - p)}{n - 1}$$

This means that for proportions of 5% with a sample size of 450 the standard error of the sample estimate is 1.0%. The standard error varies up to 2.4% for proportions of 50%. If the sample size of 800, which was proposed at one stage, had been used then these standard errors would have only decreased from 1% to 0.77% for 5% proportions and from 2.4% to 1.8% for 50% proportions.

A measure of the likely difference of the sample estimates from a census of all truck drivers is given by the standard error of each estimate. There are about 2 chances in 3 that the sample estimate from the survey of 450 truck drivers for 5% proportions will differ from a complete collection by less than one standard error and 19 chances in 20 that the difference would be less than two standard errors.

In summary, the standard errors for a survey sample size of 450 are reasonable and increasing the sample size to 800 would not have resulted in worthwhile increases in the reliability of the sample estimates.

SECTION 2. DEMOGRAPHIC PROFILE OF DRIVERS

2.1 AGE AND EXPERIENCE

Drivers in all age categories over the age of 18 years and with a wide spread of driving experience participated in the survey.

TABLE 1. AGES OF DRIVERS. n = 449

Age (Years)	% 80-90 km/h Group	% 90 km/h Group	% Total
18-25	13.0	7.3	11.6
26-30	28.4	18.9	26.1
31-40	34.3	33.3	34.1
41-50	19.2	28.8	21.6
over 51	5.1	11.7	6.7
			100.1

(Note: All figures in this report are rounded to the nearest decimal place.)

Thirty-four percent of all drivers were aged between 31 and 40 years, with 26.1% aged 26 to 30 years and 21.6% aged 41 - 50 years in both experimental groups.

Chi-squared analysis revealed a relationship between age and experimental group (x^2=14.491; d.f. = 4; p=0.0059). Reference to Table 1 suggests that, overall, the drivers from the 90km/h group (the Queensland drivers) were older than of the 80-90 km/h group. 62.1% of the 90km/h group were aged between 31 and 50 years, while 62.1% of the 80-90 km/h drivers were aged between 26 and 40.

TABLE 2 TOTAL DRIVING EXPERIENCE n = 452

Total Years Driving	80-90 km/h Group		90 km/h Group		% Total
0-5	5.0	0-15	4.5	0-15	4.9
5-10	13.8	Years	9.8	Years	12.8
10-15	28.2	Total	9.8	Total	23.7
15-20	20.0	47%	22.3	24.1%	20.6
20-25	17.1		20.5		17.9
25-30	5.6	Over	13.4	Over	7.5
30-35	4.4	25	7.1	25	5.1
35-40	4.1	Years	8.9	Years	5.3
over 40	1.8	Total	3.6	Total	2.2
		15.9%		33%	
	100.0		99.9		100.0

The majority of drivers reported 10-25 years experience driving any road vehicle (Total = 62.2%). However, in accordance with the slightly higher age distribution of the 90 km/h group drivers a smaller proportion of these drivers had 0-15 years on-road driving experience than the 80-90 km/h group and more reported over 25 years experience. (x^2=26.930; d.f.=8; p=0.0007). This is displayed in Table 2.

Almost half of the sample reported having 5 - 15 years experience in driving the type of truck they were driving on the day they were interviewed (49.3%). However, drivers with less experience and those with up to 35 and 40 years were well represented in the study.

Following the above pattern of age and total driving experience, slightly fewer drivers in the 90 km/h group had 5 - 10 years experience and slightly more had 15-20 and 25-35 years experience than did the 80-90 km/h group. (Table 3).

TABLE 3. TRUCK DRIVING EXPERIENCE n = 453

Years Driving Truck	80-90 km/h Group	90 km/h Group	% Total
0-5	14.7	14.3	14.6
5-10	30.5	17.9	27.4
10-15	22.0	21.4	21.9
15-20	11.7	22.3	14.4
20-25	12.0	8.0	11.1
25-30	3.5	8.9	4.9
30-35	2.9	8.4	3.5
35-40	2.3	0.9	2.0
over 40	0.3	0.9	0.4
	99.9	100.0	100.1

2.2 FULL TIME OR PART-TIME DRIVERS

96.5% of the sample were full-time drivers with truck driving being the only job of 94.6%. Chi-squared analysis indicated no significant relationship between experimental group and having additional employment.

TABLE 4. DRIVERS WITB OTHER JOBS

% DRIVERS WITH ADDITIONAL EMPLOYMENT

	% 80-90K km/h Group	% 90K km/h Group	% Total
Full-Time Job	1.3	4.6	2.1
Part-Time Job	2.9	4.6	3.3
No other Job	95.9	90.7	94.6
	100	100	100

2.3 LICENCE TYPES

Because licensing classifications differ across states three levels of licence classification were developed for the purposes of this study. The categories used were based on the national licence categories introduced in 1987. Equivalent licence classifications from each state were categorized by the procedure detailed in table 5. For further specification of these categories the reader is referred to the leaflet "Categories of Driver Licences" developed by the Road Traffic Authority (Victoria) (Appendix 9).

TABLE 5. LICENCES HELD

LICENCE CATEGORIES				
Vic	NSW	S.A	QLD	1987 NATIONWIDE
H	3.3a	2	C	Light/Heavy Truck 1
A or T	5	3	E	Light/Heavy Articulated 2
Road Train	5b	Road Train	Road Train	Road Train 3

Almost all of the drivers responding to this survey (97.1%) were licensed to drive articulated vehicles either classified as "light" (not exceeding 22.4 tonnes gross) or as "heavy" (exceeding 22.4 tonne gross) or Road Trains "a truck to which is attached more than one trailer" (Road Traffic Authority). Only 2.9% held licences that were only valid for the driving of light or heavy rigid trucks.

2.4 TRUCK and LOAD CHARACTERISTICS

In accordance with the licensing data obtained above the majority of drivers drove articulated (90.5%) semitrailers (91.4%) of an unladen tare weight of 11-20 tonne (86.3%). Carrying capacity was predominantly 21-40 tonne (78.8%) (Figures 1-4).

Most trucks carried loads of 16-25 tonne (57.7%); 16-20T = 24.7%; 21-25%=33.0%. The next highest proportion, 27.1%, carried up to 15 tonnes. Four percent (4.3%) of the sample were unloaded. (Figure 5).

A significant relationship between carrying capacity and experimental group was observed (x^2=20.515; d.f.=5; p = 0.0010). It would seem that, while they were still in the majority within that group, fewer 90 kmfh group drivers reported carrying capacities of 21-30T and a greater number reported 41-50T capacity than did the 80-90 kmfh group (Table 6).

TABLE 6. CARRYING CAPACITY AND EXPERIMENTAL GROUP

carrying capacity (Tonne)	80-90 km/h Group	90 km/h Group	Total
0 -10	3.8	3.6	3.8
11-20	10.6	13.4	11.3
21-30	50.6	39.3	47.8
31-40	31.5	29.5	31.0
41-50	3.2	14.3	6.0
51-60	0.0	0.0	0.0
>60	0.3	0.0	0.2

Of all drivers surveyed in the 80-90 km/h group 75.4% drove trucks registered to travel interstate. Only 57.7% of the trucks of the 90 km/h group had interstate registration (x^2=12.595; d.f.=1; p =0.004).

These figures lend encouraging support to the aim of the design of the study. It was intended that the information obtained from drivers of trucks accessed in the 90 km/h

group would be related to travelling within the state of Queensland where the speed limit has not recently been increased and has remained at 90 km/h. Although questionnaire methodology was predominantly responsible for meeting this aim it is encouraging to note that almost half of the 90 km/h sample (42.3%) were registered for intrastate travel.

Figures 1-6 on pages 18-23 detail some of these characteristics.

Of the trucks accessed in the 80-90 km/h group, 76.9% were registered in NSW or Victoria, 12.5% were registered in South Australia. Most of the 90 kmfh group were registered in Queensland (42.3%). Interestingly, however, 36% were registered in Victoria and some, 15.3%, in NSW (Table 7).

TABLE *I* STATE OF REGISTRATION

	80-90 km/h group	90 km/h group	TOTAL
NSW	28.1	15.3	25.4
VIC	48.2	36.0	45.2
SA	16.6	6.3	14.0
WA	0.3	0.	0.2
NT	1.8	0.	1.3
QU	4.4	42.3	13.8
TOTAL	100.0	100.0	100.0

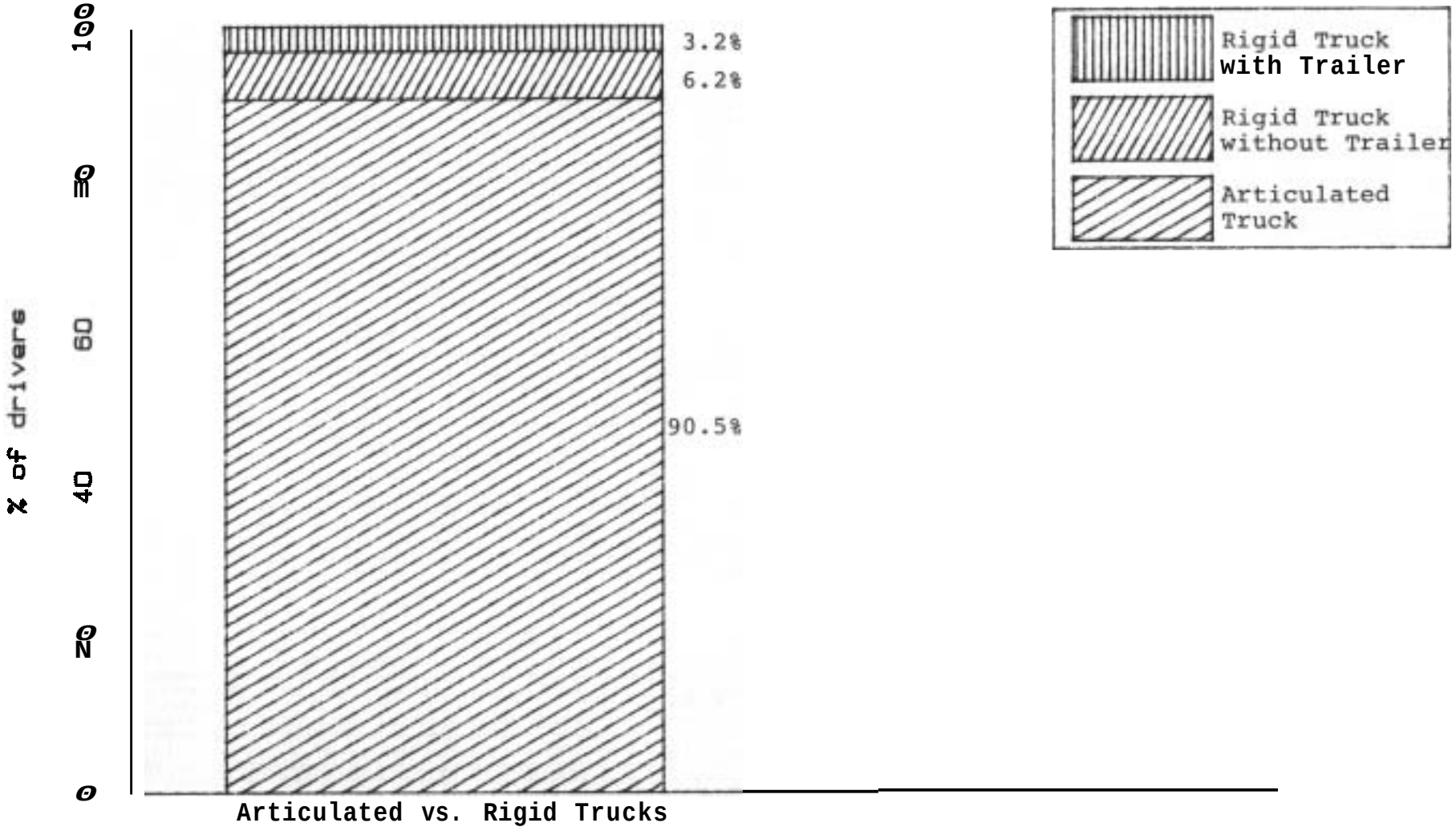

FIGURE 1: PERCENTAGE OF DRIVERS DRIVING RIGID OR ARTICULATED TRUCKS

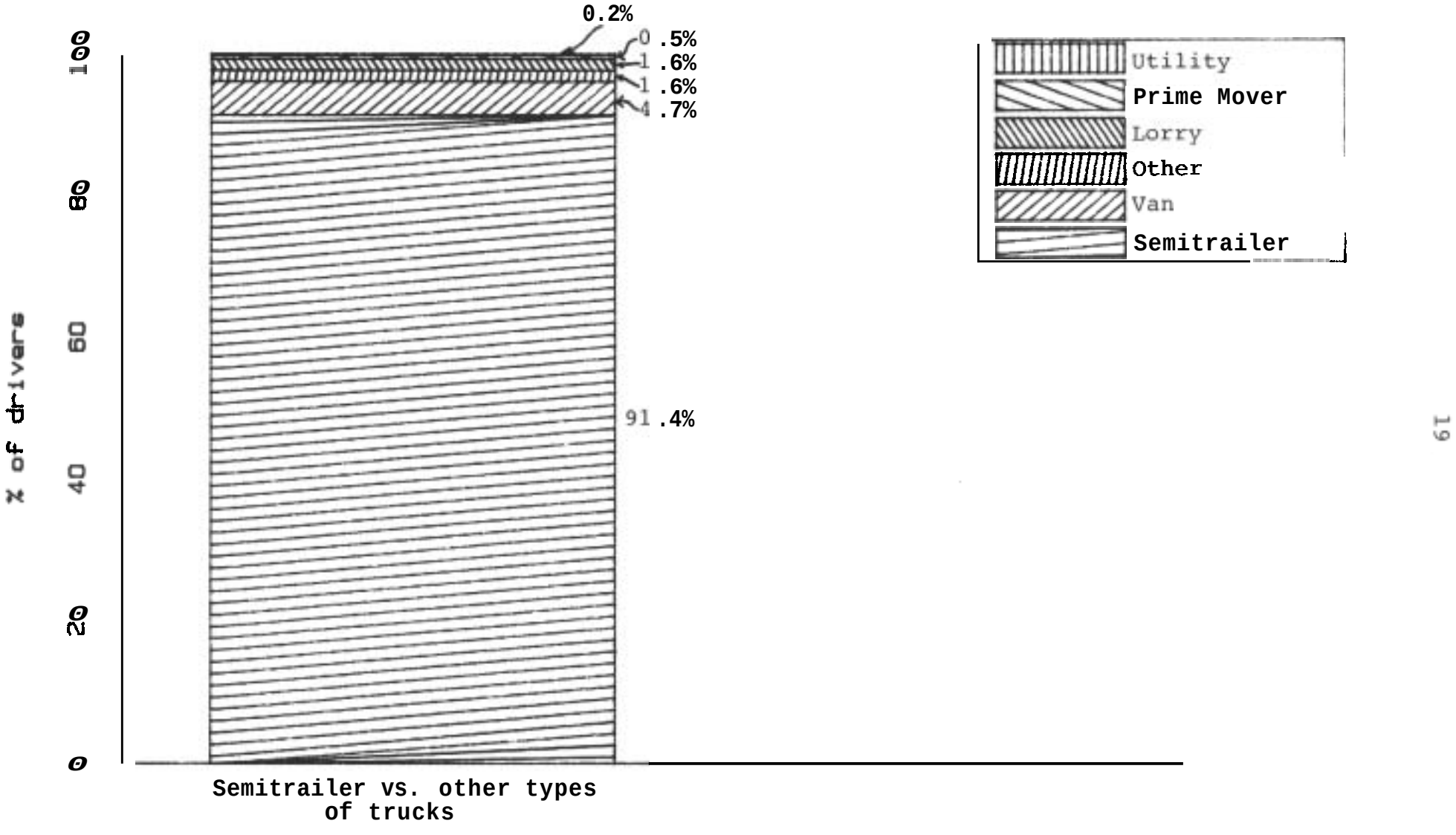

FIGURE 2: PERCENTAGE OF DRIVERS DRIVING SEMITRAILERS OR OTHER TYPES OF TRUCKS

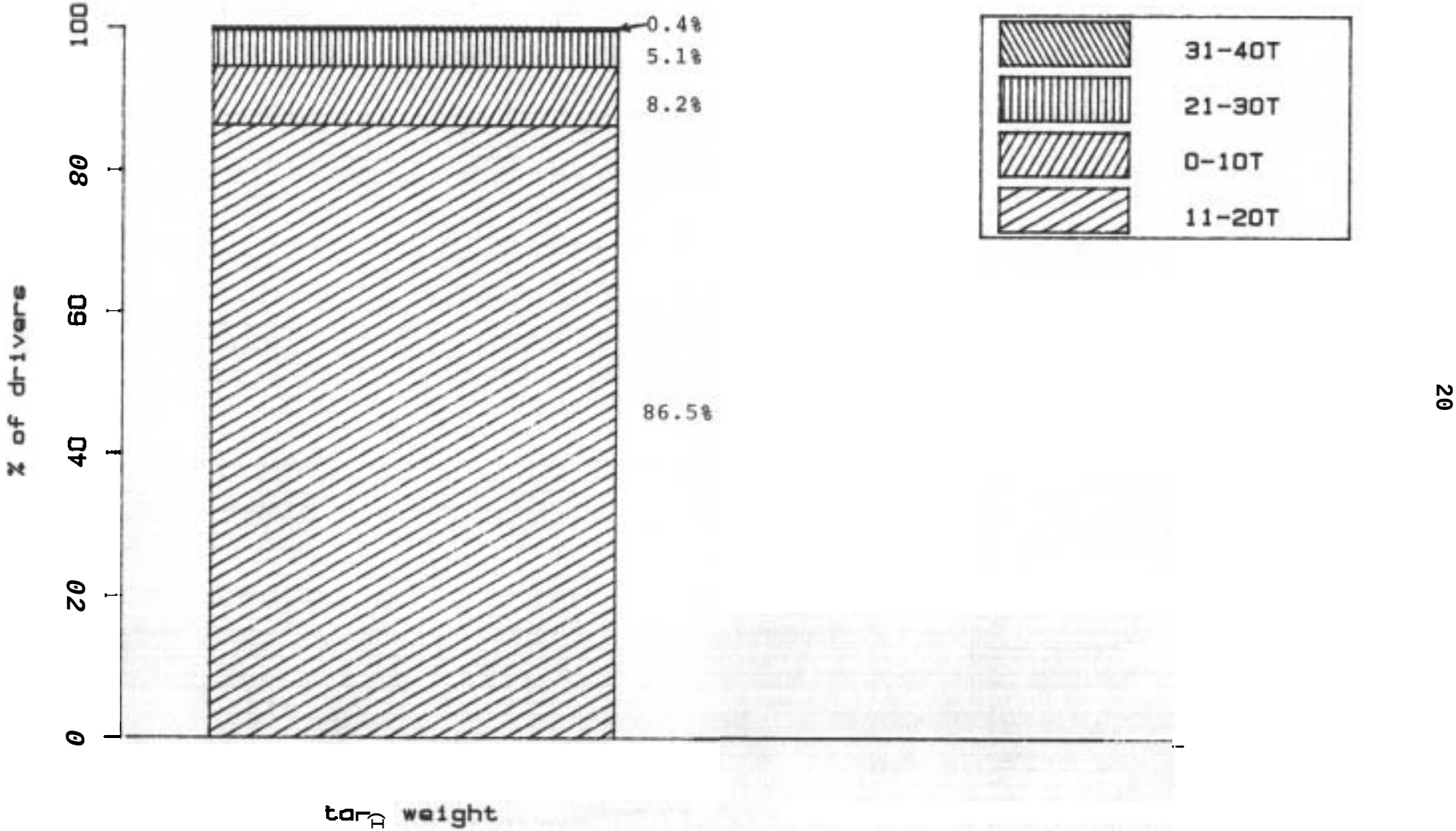

FIGURE 3: TARE WEIGHT

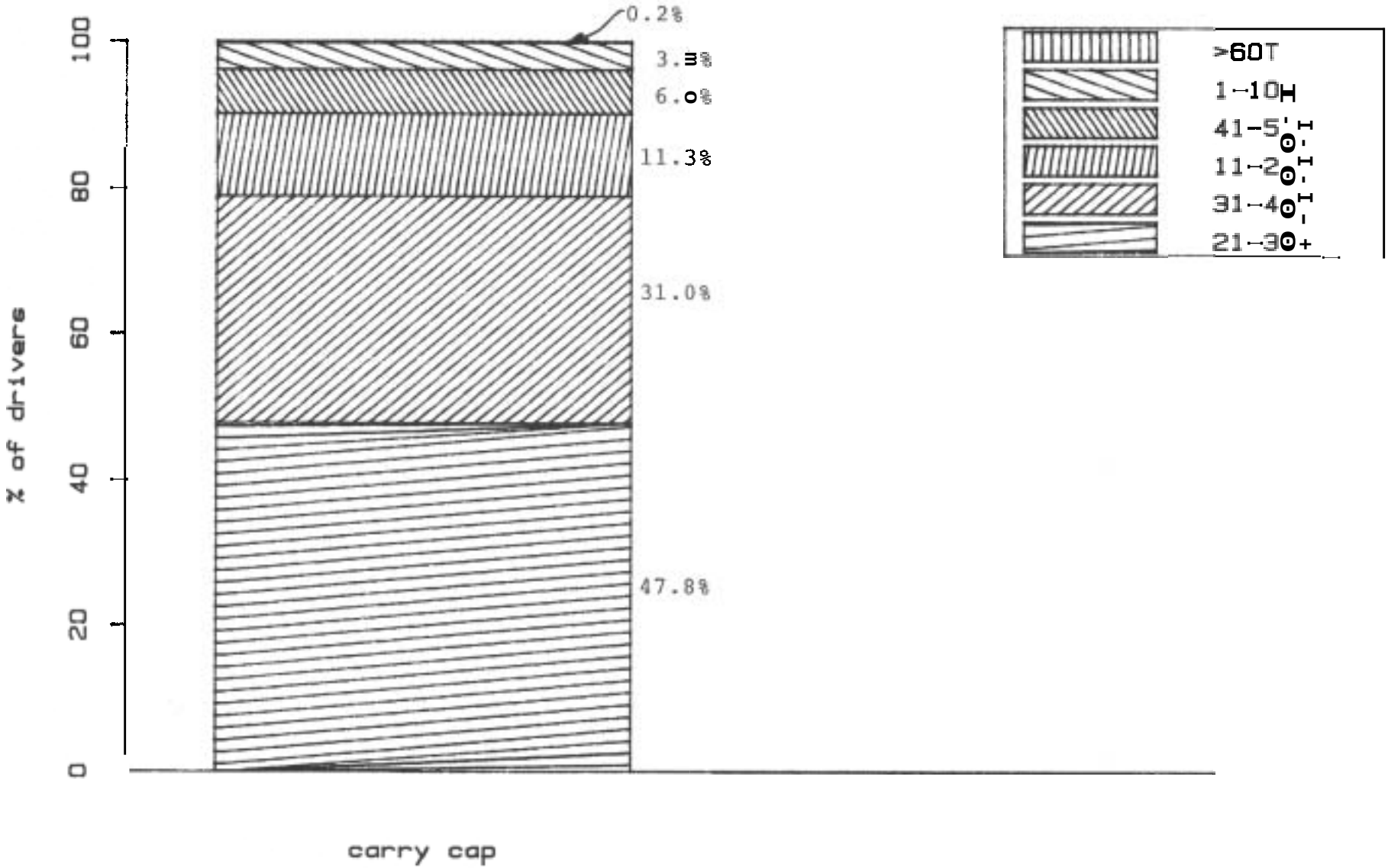

FIGURE 4: CARRYING

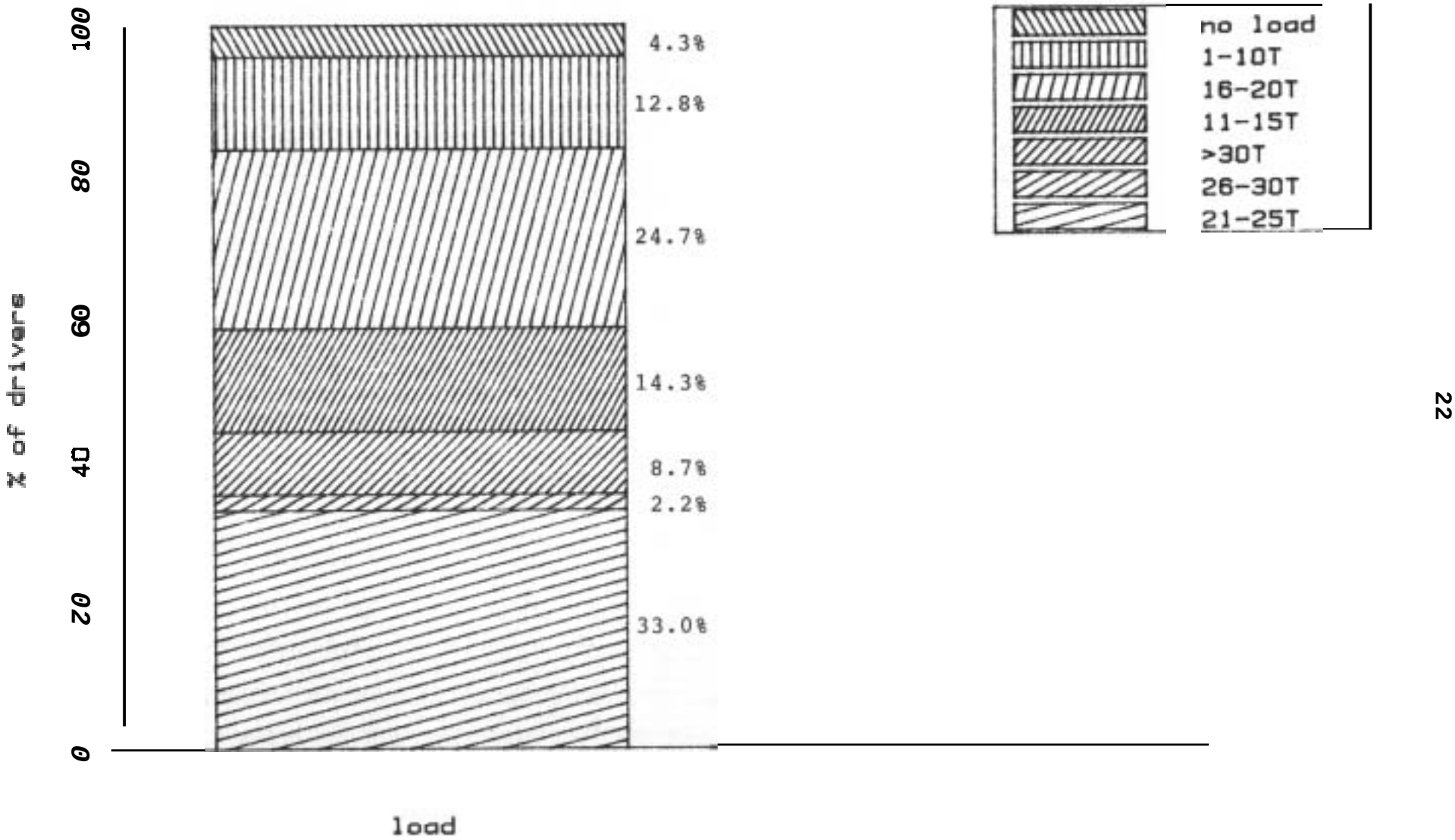

FIGURE 5 LOAD

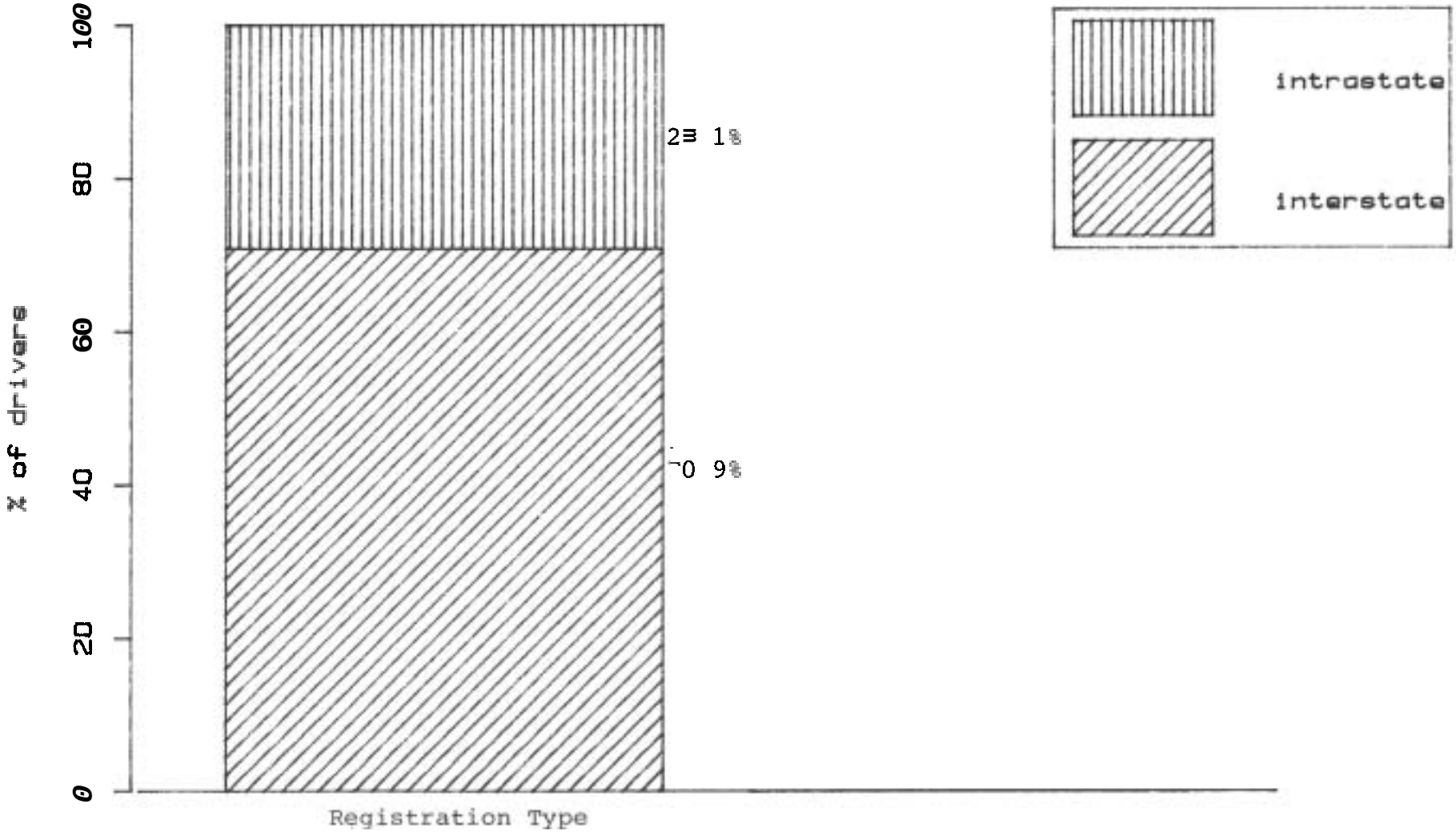

FIGURE 4. PROPORTION OF TRUCKS REGISTERED FOR INTRA OR INTERSTATE TRAVEL

2.5 TRAVEL DETAILS

2.51 Interstate and Intrastate travel

Ninety-one percent (90.5%) of the 80-90 km/h group drivers reported that they were taking an interstate journey. Sixty-two (61.8%) percent of the 90 km/h group drivers reported interstate travel (x^2=47.490; d.f.= 1; p = 0.000).

This is, again, encouraging evidence of the support of the sampling scheme for the research design. A considerable proportion (38.2%) of the 90k group drivers were travelling intrastate at the time of the survey. (Table 8).

TABLE 8 INTERSTATE/INTRASTATE JOURNEY.

	80-90k group	90k group	TOTAL
INTERTRAVEL	90.5	61.8	83.8
INTRATRAVEL	9.5	38.2	16.2
TOTAL	100.0	100.0	100.0

2.52 Weekly and annual distance travelled

Truck drivers in this sample predominantly travelled up to 6,000 km per week (88.5%) and up to 400,000 km per year (83.7%) (Table 9).

Within the distances travelled per week approximately equal proportions of the total sample travelled up to 2, 2-4,000, and 4-6,000 km per week (34.4%, 30.4%, 23.7% respectively). The between group differences were small. The 80-90 km/h group drivers more often travelled between 1-2000 k/week. The 90 km/h drivers more often travelled between 2 and 6000 k/week. (x^2 = 32.274; df=7; =0.000), (Table 12).

Almost equal proportions of drivers travelled up to 200,000, and between 2-299,000 km per year. 300-399,000

km per year were travelled by 15.5%. This pattern was evident in both experimental groups.

***TABLE* 9. WEEKLY *AND* ANNUAL DISTANCE TRAVELLED**

n = 451		n = 450		n = 452	
Km Week	%	Leg/Week	%	'000 Km Year	%
0	0.9	1	11.3	1-99	6.9
1-1999	34.4	2	28.4	100-199	33.2
2-3999	30.4	3	14.4	200-299	35.0
4-5999	23.7	4	24.4	300-399	15.5
6-7999	5.8	5	6.4	400-499	4.9
8-9999	3.3	6	8.4	500-599	2.4
10-11999	0.9	7	1.6	600-699	0.4
>12,000	0.7	8	4.9	700-799	0.7
				> 800	
	100				100

2.53 The influence of experimental group, truck ownership, route and interviewer on distance travelled

The responses to the question on distance travelled indicated that, while a small proportion, some drivers travelled over 10,000 km per week and over 500,000 km per year. However, while travel over 10,000 km/week may be achieved, it must be considered that drivers would have to be on the road for very long periods to travel between 500 to 600,000 km per year. Moreover, they would be very unlikely to achieve over 600,000 km per year. To travel 600,000 km per year a driver would need to cover aproximately 1,650 km per day. At 100 km/h this would require 16 hours driving per day for 7 days a week.

In order to determine the reason for these answers the weekly and annual distances travelled were cross-tabulated by experimental group, driving experience ownership, route of travel and interviewer. Any significant differences observed that related to the first three of these variables could all be attributed to

differences in the travel patterns for distances below 10,000 km per week and 400-500,000 km per year. These results are detailed below.

The results of the interviewer and route based differences were of more interest.

Route and interviewer differences and annual distance.

Significant differences in the tendency to report very high annual distances were found for drivers on different routes (x^2=62.390; d.f. = 24; p-0.000). In particular, drivers from Route 2 were more likely to report high annual distances. A further breakdown of this information, however, also revealed that these reports were associated with particular interviewers conducting the study on this route. (x^2=95.059; d.f. = 40; p=0.000) (Table 10).

As the other characteristics investigated did not seem to affect the reporting of high annual distances (details below) it would seem, therefore, that where unusually high annual distances of travel were noted in this study they can be most satisfactorily attributed to interviewer error in dealing with this question on the questionnaire.

Because most interviewers completed the questionnaire appropriately and all other significant relationships were unremarkable for high annual distances the results of the study pertaining to distances below 500,000 km per year can be considered to be valuable data. However, responses to the question of annual distance must be considered with the problems associated with this question in mind.

There was no evidence that this problem affected any other questions in the study.

Route and interviewer differences and weekly distances

A significant relationship was observed between the kilometres travelled per week, route of travel and interviewer (x^2 route = 71.455; d.f. = 21; p=0.000; x^2interviewer = 132.187; d.f. = 56; p=0.000). However, reference to table 11 indicated that the weekly distances

travelled by drivers on each route and interviewed by various interviewers were widely and variously spread across both variables.

Only seven drivers reported high weekly distances and these were associated with a variety of routes and interviewers, Thus, while such distances may seem unlikely, data relating to weekly distances must be accepted as adequately reflecting the drivers' behaviour.

Experimental Group

As indicated in section 2.52 there were no experimental group differences for annual distance travelled. Significant differences observed wre remarkable for weekly distances below 10,000 km per week. There was a tendency for more of the 90 km/h drivers to travel over 8-9000 km/week and, indeed, this could reasonably be the case for those drivers, some of whom may have been travelling interstate from Queensland to (say) Victoria (Table 12).

TABLE 10. ROUTE, INTERVIEWER *AND* ANNUAL DISTANCE

	km/year ('000)									
Route	1-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	>800	TOTAL
1	6.3	36.1	43.3	12.5	1.9	0	0	0	0	100
2	6.1	28.0	25.0	18.9	11.4	5.3	1.5	1.5	2.3	100
3	14.3	42.9	25.0	14.3	0.0	0	0	3.6	0	100
4	7.1	31.0	33.3	17.9	3.6	4.8	0	0	2.4	100
	6.9	33.2	35.0	15.5	4.9	2.4	0.4	0.7	1.1	

Inter-viewer	1	2	3	4	5	6	7	8	9
1	22.1	29.8	27.8	9.6	4.1	0	0	0	0
2	18.9	18.2	27.8	26.7	13.2	0	0	0	0
3	6.0	3.5	1.0	0	0	0	0	0	0
4	12.4	20.2	12.6	19.6	17.8	18.2	0	33.3	40.0
5	18.9	7.5	7.5	19.6	49.6	45.5	100.0	66.7	20.0
6	2.1	1.9	3.4	3.3	0.2	0	0	0	0
7	1.2	1.6	2.8	0	2.7	0	0	0	0
8	3.2	4.7	6.9	2.5	4.1	18.2	0	0	0
9	6.5	2.0	5.0	16.7	4.1	18.2	0	0	20
10	0	1.3	0.6	1.0	4.2	0	0	0	0
11	8.7	9.3	2.5	0	0	0	0	0	20

TABLE 11. ROUTE INTERVIEWER AND WEEKLY DISTANCES

	km/week ('000)							
Route	0	1-2	2-4	4-6	6-8	8-10	10-12	>12	Total
1	0	48.1	28.8	15.9	5.8	5.8	0.5	0.5	100
2	1.5	27.3	29.5	30.3	6.1	6.1	1.5	0.8	100
3	7.1	21.4	28.6	25.0	3.6	3.6	3.6	0.0	100
4	0.0	15.7	36.1	32.5	6.0	6.0	0.0	1.2	100

Inter-viewer	1	2	3	4	5	6	7	8
1	0	43.5	17.7	8.0	7.2	0	0	0
2	0	19.0	25.0	22.0	38.0	6.1	25.0	33.3
3	25.0	2.2	1.7	3.3	0	12.7	0	0
4	50.0	11.3	15.6	21.1	18.7	32.7	0	0
5	25.0	10.6	15.6	18.3	14.9	0	75.0	0
6	0	4.2	3.1	1.0	3.3	1.7	0	33.3
7	0	4.8	1.4	2.6	1.2	3.7	0	0
8	0	1.6	6.1	8.9	3.3	6.1	0	0
9	0	1.6	7.5	6.1	11.0	19.4	0	33.3
10	0	0	1.0	1.5	0	12.7	0	0
11	0	2.2	5.3	7.1	3.3	6.1	0	0

TABLE 12. EXPERIMENTAL GROUP AND WEEKLY DISTANCE TRAVELLED

Km/Week	Group				
	80-90 km/h		90 km/h		Total
	%	No.	%	No.	%
0	0.6	2	1.8	2	0.9
1-1999	40.0	136	17.1	19	34.4
2-3999	29.1	99	34.2	38	30.4
4-5999	21.5	73	30.6	34	23.7
6-7999	5.9	20	5.4	6	5.8
8-9999	1.5	5	9.0	10	3.3
10-11999	0.9	3	0.9	1	0.9
> 12,000	0.6	2	0.9	1	0.7
	100		100		100

Experience

The total distance travelled per week and per year was related to experience in driving the type of truck being used on the day of the study (x^2 weekly = 150.299; d.f.=56; p=0.000; x^2 annually = 116.23205; d.f. = 64; p=0.001).

In both cases there was a trend for drivers with 0-5 years experience to be more likely to drive below 2,000 km per week and 100,000 km per year. Weekly distances between 1-10,000 km and annual distances of between 100,000-500,000 kms tended to be evenly spread across all categories of experience.

Drivers indicating weekly travel over 10,000 km and annual travel over 500,000 km were from various categories of experience.

Truck ownership

Ownership of the truck was not related to the distance travelled per week. The significant difference in the annual distance travelled between employed and owner drivers was predominantly related to their pattern of travel at distances below **500,000** km per year. Forty-four percent **(43.8%)** of owner drivers compared to **29.5%** of employees reported annual distances of **200-299,000** km per year. However **17.2%** of employed drivers, compared to **11.4%** of owner-drivers reported annual distances of 300-**399,000** km per year (x^2 **= 15.858;** d.f. **= 8;** p=0.0445).

A slightly higher percentage of employed drivers reported travel of **500-599,000** km per year compared to owner drivers **(3.1%** employees; **1.7%** owner-drivers). However, larger distances were reported by **1.7%** of owner-drivers and **1.9%** of employees (Table **13).**

TABLE 13. ANNUAL DISTANCE TRAVELLED AND OWNERSHIP

km/year ('000)	Owner driver %	NO.	Employed driver %	No.
1-99	**5.7**	**10**	**8.0**	**21**
100-199	**31.8**	**56**	**34.9**	**91**
200-299	**43.8**	**77**	**29.5**	**71**
300-399	**11.4**	**20**	**17.2**	**45**
400-499	**4.0**	**7**	**5.4**	**14**
500-599	**1.7**	**3**	**3.1**	**8**
>600	**1.7**	**3**	**1.9**	**5**

2.54 Legs travelled per week

Because some drivers continue on from one destination to another and do not complete round trips, drivers were asked how many legs they had travelled in the past week. These results described how many times the drivers had travelled from an origin to a destination to deliver goods and/or to return to a base in a typical week.

Drivers predominantly drove up to 4 legs per week (78.5%). However, 14.8% travelled 5-6 legs/week and 6.5% reported travelling 7-8 legs/week. This pattern was similar in both experimental groups (Table 9).

2.55 Hours driving on this trip

A third of the drivers were on a 10-11 hour trip (32.3%). 64.6% of the drivers were on journeys lasting less than 10 - 14 hours (Table 14).

Owner drivers were less likely to do journeys of less than 10 hours and were somewhat more likely to do journeys over 12 hours (52.9% owner drivers; 47.1% employee drivers; x2=28.197; d.f=16; =0.0300) (Table 10).

TABLE 14. HOURS TRAVELLED PER TRIP AND OWNER DRIVERS n=433

No. Eours travelled	% Owner Driver	% Employee Driver
<10	12.6	22.0
10-11	34.5	30.9
12-13	16.1	12.7
14-15	8.0	5.0
16-30	17.2	17.3
31-50	6.9	10.1
>50	4.7	2.0
	100	100

The number of hours travelled by the 90 kmfh group were far more variable and wide spread than the 80-90 kmfh group (x^2=127.133; d.f.=16; p=0.000).(Table 15).

TABLE 15 HOURS TRAVELLED PER TRIP AND EXPERIMENTAL GROUP n=448

No. Hours travelled	% 80-90 km/h Group	% 90 km/h Group	% Total
<10	17.6	19.6	18.1
10-11	41.1	1.9	31.7
12-13	15.8	10.3	14.5
14-15	6.2	5.6	6.0
16-30	11.2	37.3	17.5
31-50	5.7	21.4	9.3
>50	2.6	3.7	2.9
	100	100	100

2.6 TRAVEL ON THE SURVEY ROUTES.

Considerable proportions of drivers in both groups reported that they had travelled along their current route of travel 3-5 times in the last fortnight (Total = 37.9%). The majority of drivers reported this in the 80-90 km/h experimental group (40.1%). 31.3% travelled 3-5 times per fortnight in the 90 kmfh group, however, a considerable number (32.1%) also travelled 1-2 times in that group. 28.9% and 17.9% had travelled along their current route 6-8 times in the last fortnight. Table 16).

TABLE 16. NO. LEGS TRAVELLED ON CURRENT ROUTE.

No. Legs	80-90 km/h group	90 km/h group	TOTAL
0	3.2	5.4	3.8
1-2	12.1	32.1	17.1
3-5	40.1	31.3	37.9
6-8	28.9	17.9	26.2
9-11	6.8	3.6	6.0
12->	8.8	9.8	9.1
TOTAL	100.0	100.0	100.0

2.7 TRUCK OWNERSHIP

Four hundred and thirty-eight drivers were willing to indicate if they were employed or owner drivers. Forty percent (40.25) were owner drivers (Figure 7).

A significant relationship between being an owner driver and experimental group was found (x^2 = 7.194, d.f.=1, p=0.0052). As Table 17 and Figure 7 indicate there were more owner drivers in the 80-90 km/h group.

TABLE 17. TRUCK OWNERSHIP BY ROUTE

Owner	80-90 km/hr	90 km/hr	Total
Owner driver	36.5	51.9	40.2
Employed driver	63.5	48.1	59.8
Total	100.0	100.0	100.0

A significant relationship was also found between being an owner driver and the number of years experience in truck driving (x^2 = 28.241, d.f. = 8, p=0.0004). Table 18 suggests that those with the greatest number of years experience were more likely to own their own truck.

TABLE 18. YEARS OF DRIVING EXPERIENCE BY TRUCK OWNERSEIP

Experience	Owner	Employee	Total
0-5	10.8	17.9	15.1
5-10	23.3	29.4	26.9
10-15	27.8	18.7	22.4
15-20	12.5	15.3	14.2
20-25	8.5	12.6	11.0
25-30	6.3	3.4	4.6
30-35	5.7	2.3	3.7
35-40	4.5	0.0	1.8
>40	0.6	0.4	0.5
Total	100.0	100.0	100.0

Of the owner-drivers 68.6% fully owned their trucks (Figure 8), 40.6% having single ownership and 28.0% owning their trucks in a partnership or group (Figure 9). The remaining 31.4% were paying off their trucks; 18.3% making repayments alone and 13.1% in a partnership or group.

The responses indicated that drivers from the 80-90 kmfh group were more likely to fully own their trucks. This was compared to 40.7% of the 90 kmfh group. Of the 80-90 kmfh group 63.7% had full single ownership of their trucks while only 48.1% of the 90 kmfh group did so. Only 36.3% of the 80-90 km/h drivers were repaying their trucks while 51.8% of the 90 kmfh drivers still faced repayments (x^2=32.272; d.f.=3, p=0.000). This is pictured in Figures 11 and 12.

The pattern of years of truck ownership was not related to experimental group. Most drivers had owned their trucks for 2-5 years although a considerable proportion had 5-10 years ownership.

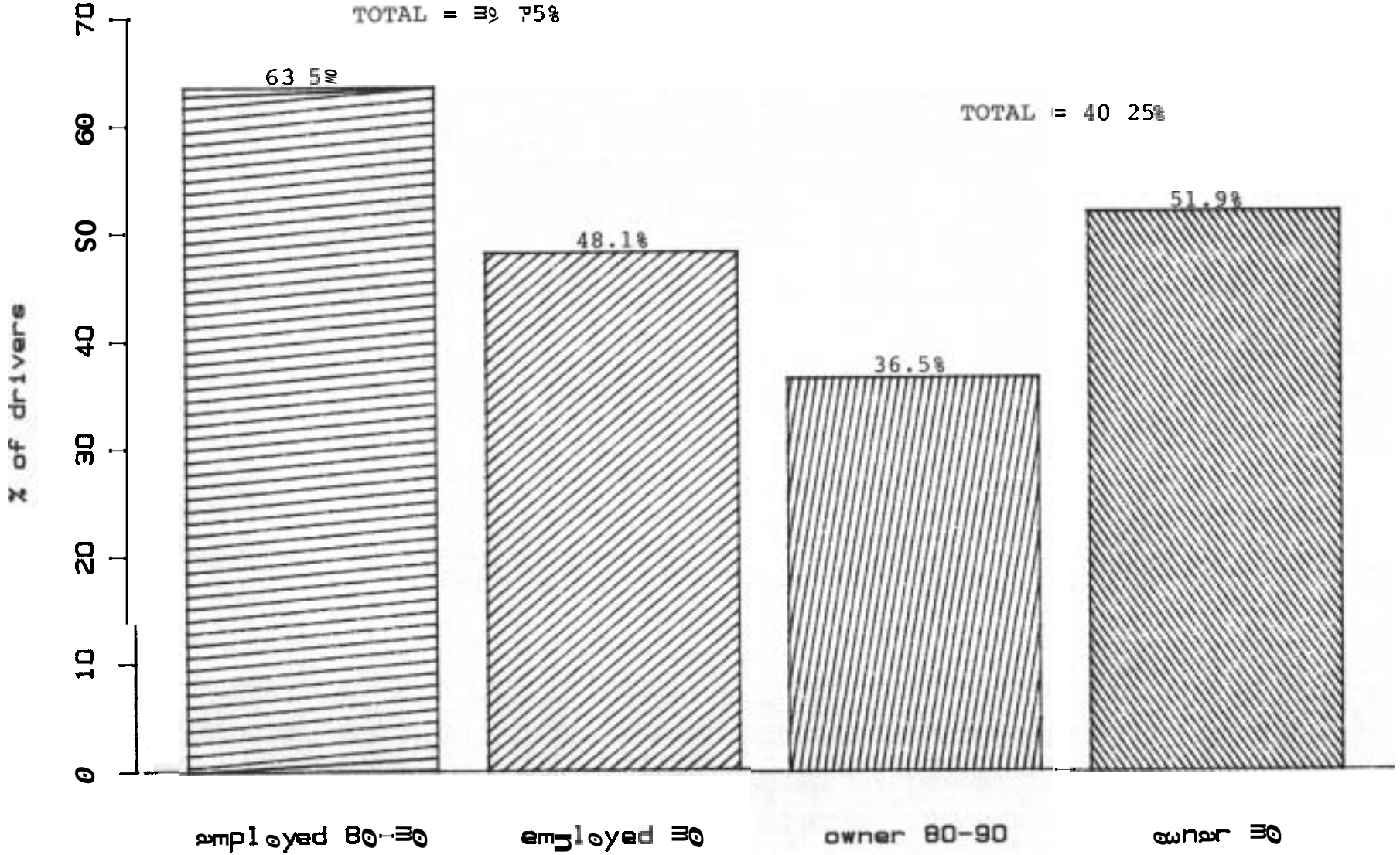

FIGURE 7: PROPORTIONS OF EMPLOYED VERSES OWNER DRIVERS IN THE 30-90 Km/h AND 90 Km/h GROUPS.

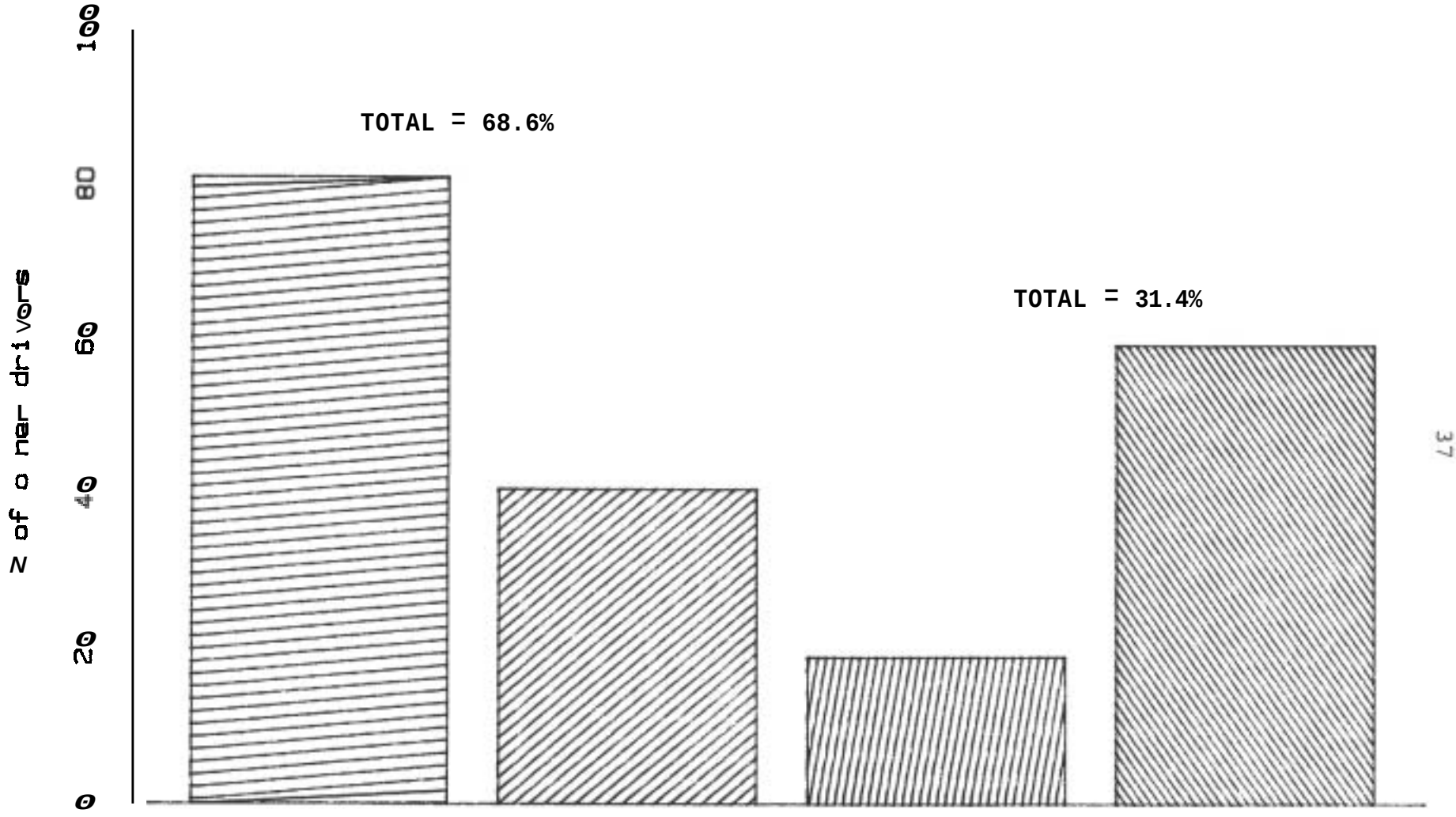

FIGURE 8: PROPORTIONS OF OWNER DRIVERS WHO FULLY OWNED OR WERE PAYING OFF THEIR TRUCKS BY EXPERIMENTAL GROUP.

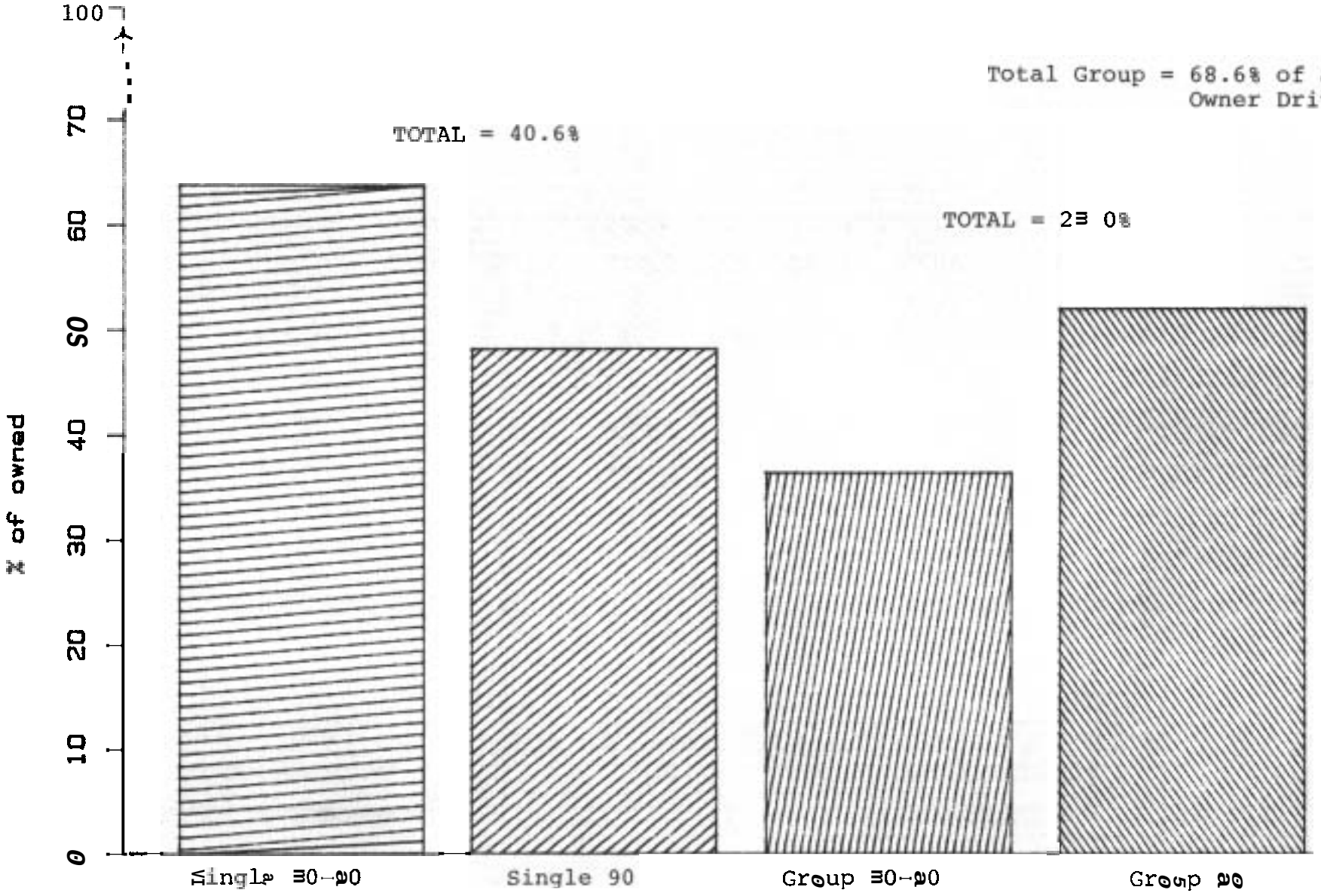

FIGURE 9: PROPORTIONS OF OWNER DRIVERS WHO FULLY OWN THEIR TRUCKS ALONE OR IN A PARTNERSHIP/GROUP BY EXPERIMENTAL GROUP

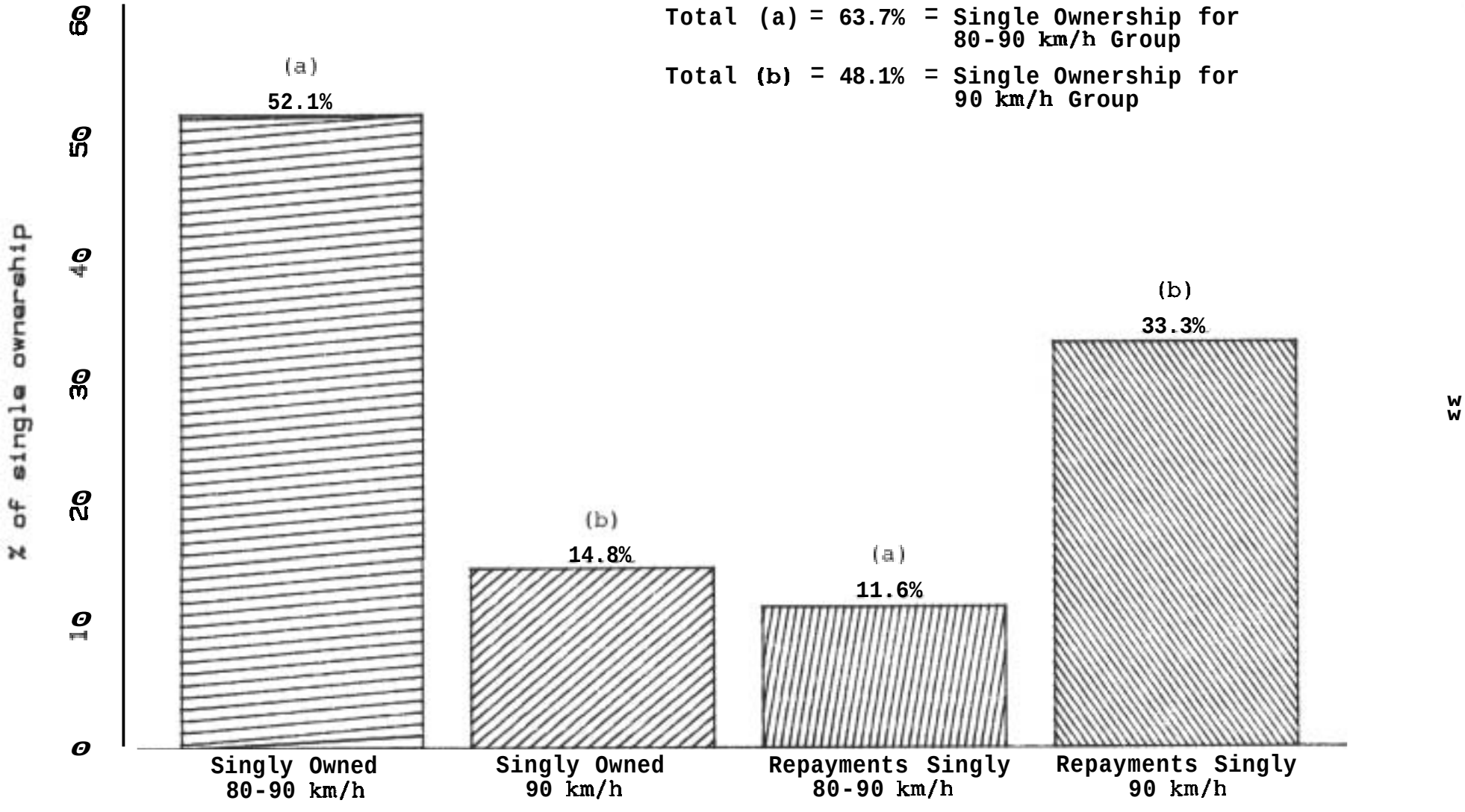

FIGURE io: PROPORTIONS OF TRUCK DRIVERS WHO FULLY OWN OR ARE PAYING OFF THEIR TRUCKS ON THEIR OWN BY EXPERIMENTAL GROUP.

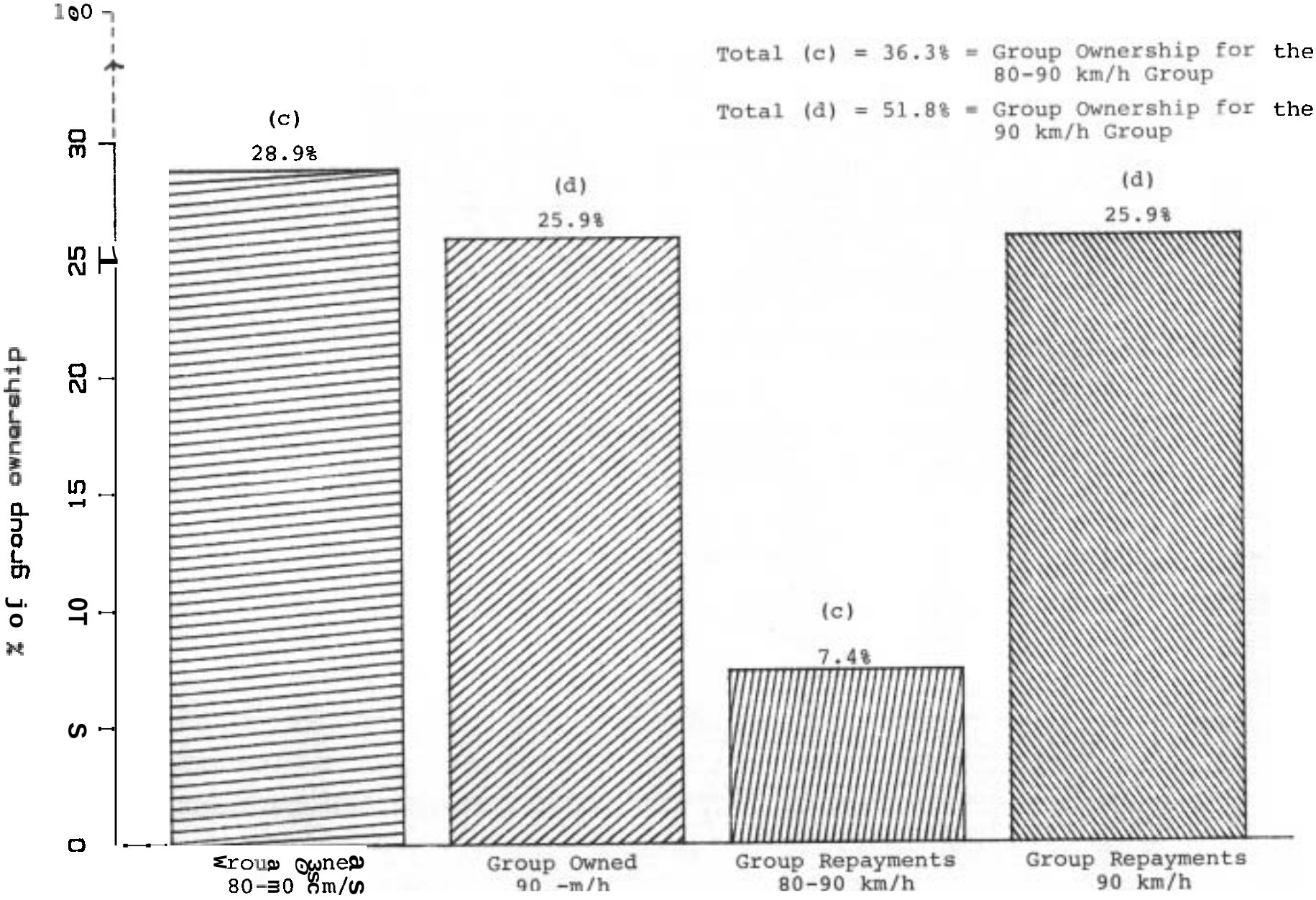

FIGURE 11: PROPORTIONS OF DRIVERS WHO FULLY OWN OR ARE PAYING OFF THEIR TRUCKS IN A PARTNERSHIP OR GROUP BY EXPERIMENTAL GROUP.

SECTION 3 - PREFERRED SPEED OF TRAVEL AND SPEED LIMITS

3.1 CURRENT SPEED OF TRAVEL

Day Time Travel

A total of 444 drivers indicated their daytime speed of travel along the routes on which they were driving at the time of the survey.

By far the majority of drivers reported that the speed that they preferred to travel at on their routes of travel was 6-10 km/h above the current speed limit. 59% reported their preferred speed to be 96-100km/h.

The next highest but much smaller proportion of drivers (19.2%) reported that they travelled within 5 km/h around the current truck speed limit: of these 7.9% preferred to travel at 86-90km/h and 11.3% at 91-95 km/h.

An equal proportion reported that they travelled over 10 and up to 20 km/h above the current speed limit preferring to travel 101-110 km/h (18.5%). 10.6% travel 101-105 km/h and 7.9% between 106-110 km/h. (Table 19).

Night Time Travel

All but one of the total sample of respondents reported their speed of travel during the night time (452).

Speed of travel tended to be more variable at night than during the day. In addition, a considerably higher proportion of drivers reported preferring to travel at speeds above 100km/h (daytime' 19.6%; night time=35%).

As for daytime travel, however, the majority of drivers travelled 96-100 km/h. However, for night time travel this group of drivers only represented 45.4% of the total sample. A considerable proportion travelled 101-105 km/h (18.1%) and 11.9% reported that they travelled 106-110 km/h.

The most interesting aspect of the responses obtained is that, although the current speed limit is 90 km/h, most drivers reported that they travelled at a speed around 100 km/h; that is at the speed at which the majority indicated that they would prefer the speed limit to be set (See Section below).

TABLE 19. PREFERRED SPEED OF TRAVEL

Speed Of Travel (km/h)	% Drivers Reported Day time	% Drivers Reported Night time
80-85	2.3	2.4
86-90	7.9	8.2
91-95	11.3	8.8
96-100	59.0	45.4
101-105	10.6	18.1
106-110	7.9	11.9
111-115	0.2	0.4
116-120	0.7	2.7
121-125	0.2	1.5
>130	0.0	0.4

Speed of travel was cross-tabulated by experience in driving the truck, total kilometres travelled per year, owner operator or employee driver, experimental group and route of travel. The following signiificant results were obtained.

3.11 Preferred speed of travel and experience

The speed at which the truck drivers reported that they trave1led during the night time was significantly related to the extent of experience in driving their truck (x^2=98.869; d.f.=72; p=0.0196)

Reference to the data in Table 20 suggests that this relationship may be due to the responses of drivers with 20-25 and 35-40 years experience. In general, drivers of all levels of experience reported travelling at speeds ranging between 86 and 110 km/h, the majority travelling

96-100 km/h and the next largest proportion travelling 101-110 km/h. However, drivers of 20-25, and 35-40 years experience tended to be less varied in their choice of speed, a somewhat larger majority choosing to travel at 96-100 km/h (20-25=60.0%; 35-40=88.9%). The responses of those with over 40 years experience may also have contributed to these findings, however, interpretation of this must be undertaken with the caution that only two drivers were in this group.

TABLE 20. SPEED OF TRAVEL AT NIGHT AND EXPERIENCE

Night time Speed Travel (km/h)	Experience (years) 0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	>40
80-85	3.1	0.8	0.0	4.6	6.0	0.0	12.5	0.0	0.0
86-90	15.4	5.6	6.1	6.2	8.0	13.6	12.5	0.0	50.0
91-95	7.7	8.1	5.1	18.5	8.0	9.1	12.5	0.0	0.0
96-100	40.0	40.3	49.5	40.0	60.0	45.5	37.5	88.9	0.0
101-105	16.9	27.4	17.2	12.3	14.0	13.6	12.5	0.0	0.0
106-110	12.3	12.1	15.2	12.3	4.0	18.2	6.3	11.1	0.0
>110	4.6	5.6	7.0	6.2	0.0	0.0	6.3	0.0	50.0

3.12 Preferred speed of travel and annual distance

The speed travelled during both the day and the night was significantly related to the total kilometres travelled per year. Reference to Table 21 suggests that while those drivers who travel below 300,000 km/year and above 500,000 km/year predominantly choose to travel at 96-100km/h during the day, drivers travelling between 300-500,000 km/year were more diverse in their speed of travel with a smaller majority travelling at 96-100 km/h and larger proportions travelling between 86-95 and 101-110 (x^2=91.179; d.f.=64; p=0.0145). Interestingly, a similar pattern for night travel was apparent. Drivers travelling 400-500,000 km/year were far more varied in their speed of travel (x^2=116.432; d.f.=72; p =0.007) (Table 22).

TABLE 21. PREFERRED DAYTIME SPEED AND DISTANCE TRAVELLED PER ANNUM

Day time Speed Travel (km/h)	Km/year (00,000) .l-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	>8
80-85	12.9	1.3	1.3	1.5	5.3	0.0	0.0	0.0	0.0
86-90	12.9	9.4	5.1	6.0	21.1	0.0	0.0	0.0	20.0
91-95	22.6	8.1	7.0	19.4	21.1	9.1	50.0	0.0	20.0
96-100	51.6	64.4	66.2	40.3	26.3	63.6	50.0	100.0	60.0
>100	0.0	16.8	20.3	32.8	36.3	27.3	0.0	0.0	0.0

TABLE 22. PREFERRED NIGHTTIME SPEED AND DISTANCE TRAVELLED PER ANNUM.

Night time Speed Travel (km/h)	Km/year (00,000) .l-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	>8
80-85	16.1	1.3	1.3	0.0	4.5	0.0	0.0	0.0	20.0
86-90	16.1	8.0	4.5	8.6	22.7	0.0	0.0	33.3	20.0
91-95	6.5	9.3	6.4	12.9	13.6	9.1	50.0	0.0	0.0
96-100	38.7	49.3	47.8	40.0	18.2	54.5	50.0	66.7	40.0
>100	22.6	32.0	40.1	38.5	40.9	36.4	0.0	0.0	20.0

3.13 Preferred speed of travel and truck ownership

Being an owner operator or an employed driver was significantly related to daytime speed (x^2=19.192; d.f.=8; p=0.0139). In general, most employed drivers reported that they travelled at speeds somewhat higher then the owner operator group. The majority of owner operators travelled at 91-100 km/h (76.9%), while most employed drivers travelled at speeds between 96 and 105 km/h (72.3%) (Table 23).

TABLE 23. SPEED OF TRAVEL, EMPLOYED *AND* OWNER DRIVERS.

Speed Of Travel (km/h)	% Owner Drivers	% Employee Drivers
80-85	3.5	1.2
86-90	8.1	8.2
91-95	12.7	9.8
96-100	64.2	57.8
101-105	4.0	14.5
106-110	6.9	7.0
111-115	0.0	0.4
116-120	0.0	1.2
121-125	0.6	0.0
>130	0.0	0.0

3.14 Preferred speed of travel and experimental group

The speed at which drivers chose to travel during both the night and the day was significantly associated with experimental group (x^2daytime=65.944; d.f.=8; p=0.000) (x^2night time =160.379; d.f.=9; p=0.00)

For travel in both conditions the majority of drivers reported preferring to travel at 96-100 km/h. However, the size of this majority was much smaller for the 90 km/h group whose preferred travel speeds were far more variable and widespread .

During both the day and night, the drivers from the 90 km/h group were far more likely to report travelling at speeds less than 90 km/h and over 106 km/h. During the day 22.5% of the 90 km/h drivers reported travelling below 90 km/h. During the night 22.4% of the 90 km/h drivers reported travelling below 90 km/h. This was reported by 6% and 6.8% of drivers from the 80-90 km/h group for day and nighttime travel respectively. 19.8%

and 27.6% of the 90km/h group travelled above 106 km/h during the day and night respectively. This was reported by only 5.4% and 13.2% from the 80-90km/h group.

However, the effect of experimental group on speed of travel must be considered with regard to the effect of route of travel on preferred speed.

TABLE 24. SPEED OF TRAVEL, TIME OF DAY AND EXPERIMENTAL GROUP.

	Daytlme			Night time		
	80-90 km/h group	90 km/h group	Total	80-90 km/h group	90 km/h group	Total
Speed (km/h)						
80-85	1.5	4.5	2.3	1.8	4.5	2.4
86-90	4.5	18.0	7.9	5.0	17.9	8.2
91-95	10.5	13.5	11.3	8.2	10.7	8.8
96-100	67.3	34.2	59.0	50.9	28.6	45.4
101-105	10.8	9.9	10.6	20.9	9.8	18.1
106-110	4.2	18.9	7.9	7.6	25.0	12.0
>110	1.2	0.9	1.1	5.6	3.6	5.1

3.15 Preferred Speed of Travel and Route

Interestingly, as well as being related to experimental group, the speed at which drivers preferred to travel was also significantly related to the route on which they were travelling.

Reference to Table 25 suggests that drivers on the Warrego Highway were more likely to prefer to travel at higher speeds than were those on the other three routes even though those drivers were in the same experimental group as those on route 3.

As experimental group was determined by route (and the recent change of speed limit on that route) this suggests that the differences in the speed of travel of drivers in

different experimental groups may be more related to route based factors than to the speed limit differences that defined the experimental groups. This influence of route based factors is an important finding of the study. It is further investigated and discussed in regard to the effect of speed limits on speed of travel in sections 3.3, 4 and 8.

TABLE 25. PREFERRED TRAVEL SPEED BY ROUTE n=448

Preferred Speed	Route 1	2	3	4	TOTAL
80-90	1.46	14.17	43.64	15.48	10.38
91-95	4.61	16.86	3.64	14.88	10.04
96-100	61.41	55.17	49.09	25.60	52.12
101-105	20.87	8.05	3.64	11.90	14.40
106-110	6.31	5.36	0	29.17	9.93
>110	5.34	0.88	0	2.99	3.11
Total	100.00	99.99	100.01	100.02	99.98

KEY
Route 1 Melbourne - Sydney: Hume Highway
Route 2 Melbourne - Adelaide: Western Highway
Route 3 Brisbane - North Queensland: Bruce Highway
Route 4 Brisbane - South West Queensland: Warrego Highway.

3.2 SPEED OF TRAVEL *AND* THE EYRE HIGEWAY.

To further investigate the influence of current speed limits on speed of travel drivers who had travelled along the Eyre Highway in the last six months were identified and asked what their speed of travel was under normal driving conditions. The legal truck speed limit along the Eyre Highway was raised to 100 km/h on 1 January, 1987.

Eighty-one drivers reported having travelled on the Eyre Highway. Those drivers reported a wide spread of speeds ranging from 96-100km/h to 116-120 km/h. (Table 26).

TABLE 26. SPEED TRAVELLED ON TEE EYRE RIGRWAY.

Speed (km/h)	Proportion of Drivers who travel at speed.
80-95	8.6
96-100	21.0
101-105	13.6
106-110	14.8
111-115	18.5
116-120	13.6
>121	9.8

3.3 PERCEIVED CHANGES IN SPEED OF TRAVEL

Drivers were asked to indicate any perceived changes in their speed of travel or in the speed that they felt that they had to travel at to be competitive since last year. For the 80-90km/h group the current speed limit had been increased during the preceding year.

By far the majority of drivers indicated no change in their speed of travel since last year nor in the speed required to deliver their load on time. However, a substantial proportion indicated that they travelled slightly faster relative to last year and to meet their schedules (Table 27).

TABLE 27. RESPONSES TO QD.5 AND 6 AND EXPERIMENTAL GROUP.

QD.5 **Compared to last year. I now travel along this route at a speed that is**

	% Slower	% A Little Slower	% Neither Slower nor Faster	% A Little Faster	% Faster
80-90 km/h group	1.2	2.7	55.4	38.0	**2.7**
90 km/h group	0.9	4.5	72.1	17.1	5.4
Total	**1.1**	**3.1**	59.6	32.8	3.4

QD.6 **If I am going to deliver my load within the time expected of me I must now travel at a speed that is**

	% Slower	% A Little Slower	% Neither Slower nor Faster	% A Little Faster	% Faster
80-90 km/h group	0.3	**0.3**	65.5	25.6	8.3
90 km/h group	0.0	1.8	**83.0**	10.7	4.5
Total	0.2	**0.7**	69.9	21.9	7.4

The most interesting aspect of the answers obtained, however, was that responses to both questions were significantly dependent on experimental group and route of travel.

3.31 Changes in speed of travel, experimental group and route of travel.

For both questions the 80-90 km/h group, that is the group for whom the speed limit had increased in the preceding year, were far more likely to record that they were currently travelling, and needed to travel, at slightly higher speeds relative to when the speed limit was lower (x^2 (QD.5) = 17.742; d.f.=4; p=0.0014. x^2 (QD.6) = 17.029; d.f=4 p=0.0019) (Table 27).

However, the major question of this study was to examine the influence of speed limits and recent changes in speed limits on speed and driving behaviour. It is therefore important to determine if the difference in response between experimental groups to these questions was related only to the differences in recent changes to their speed limits.

The responses of the drivers in each experimental group were broken down further into their responses by the four routes surveyed. Chi-square analysis revealed that there was indeed a significant relationship between the drivers' answers and their route of travel (x^2 (QD.5) = 48.557; d.f.=12; p=0.0000. x^2 (QD.6) = 28.093; d.f=12; p=0.0054) (Table 28).

It is apparent that the drivers' responses were not consistent with what would be expected if an increase in speed of driving and the need to go faster to meet schedule demands was most often associated with the group for whom the speed limit had recently increased.

Drivers on the Warrego Highway were much less likely to report going or needing to go faster this year than were the other Brisbane drivers or the drivers from the other experimental group.

The proportions of drivers reporting "slightly faster" responses to both these questions from the North Brisbane route were more similar to the proportions of drivers reporting these responses on the Melbourne/Adelaide route, a different experimental condition. Indeed, somewhat more drivers reported going faster this year from the North Brisbane, 90km/h group than from the Melbourne - Adelaide 80-90km/h group.

Increases in speed and the need to travel faster to be competitive were not reported by the majority of drivers and, where reported, drivers considered that their speed had only increased "a little".

However, the pattern of responses was not entirely consistent with the hypothesis that, where increases were reported, they would be reported by a larger proportion of drivers from the group in which the speed limit had increased during the comparison period.

It would seem that factors other than speed limit and changes in the speed limits alone influence the drivers' speed of travel. Moreover the other factors that influence speed of travel are likely to be those that are related (in addition to speed limit) to the specific route of travel.

This result was borne out by the drivers' responses to other sections of the study and to the Multiple Regression analysis. The reader is referred to Sections 4 and 8.

3.32 Changes in speed of travel, ownership and experience.

Drivers' responses to whether they now travelled at a greater speed along their route were significantly dependent on both their experience and whether they owned their truck.

Owner drivers were less likely to say that they had slightly increased their speed (x^2=16.970; d.f.=4; p=0.0020).

Drivers with 0-5 years and 30-35 years experience were more likely to say that they had not increased their speed since last year. Of those who had 20-25 years and 35-40 years experience a somewhat higher proportion reported that they travelled "faster" than last year (x^2=74.523; d.f=32; p=0.000) (Table 29).

The driver's reported tendency to travel faster this year and his reported need to travel faster to get to his destination on time was not significantly related to whether he was an owner driver or the extent of his experience in driving his truck.

3.4 PREFERRED SPEED LIMIT.

By far the majority of drivers would prefer a truck speed limit of 100km/h.

The majority of the remaining drivers would prefer a truck speed limit of 110 kmlh. Only 1.8% were happy with the current speed limit (Table 30).

3.41 Preferred speed limit, truck ownership and experience.

Preference for truck speed limits was not significantly influenced by truck ownership. A significant association was found for experience, however the result was apparently entirely due to a dissenting response from one of the two drivers with over 40 years experience and was, therefore, of little practical value (Appendix 5).

3.42 Speed limit Preference, Experimental group and Route of Travel.

Preferred speed of travel was significantly related to experimental group (x^2=69.995; d.f.=5; p=0.000). A much larger proportion of the 90 km/h group, that is those who had not recently had a change of speed limit and who had been travelling at 90 km/h for longer than a year, reported that they would prefer a speed of 110 km/h.

However, chi-square analysis also revealed a significant relationship between preferred truck speed limit and the route of travel (x^2=101.443; d.f=15 p=0.000). The vast majority of drivers from the eastern state routes and the

North Brisbane route similarly preferred a speed limit of 100 km/h. However, almost equal proportions of drivers from the South Brisbane route preferred a speed limit of 100 km/h and of 110 km/h.

This evidence also suggests that the prevailing speed limit and the recency of the speed limit are not the only factors influencing drivers' speed of travel and preferred speed of travel. Factors relevant to the route of travel also seem to be of influence.

TABLE 28. RESPONSES TO QD.5 AND 6 AND ROUTE OF TRAVEL.

QD.5 Compared to last year, I now travel along this route at a speed that is

Route	% Slower	% A Little Slower	% Neither Slower nor Faster	% A Little Faster	% Faster
1	1.0	1.5	51.2	44.3	2.5
2	1.5	5.3	61.7	28.6	3.0
3	0.0	0.0	50.0	35.7	14.3
4	1.2	6.0	19.5	10.8	2.4
Total	1.1	3.1	59.6	32.8	3.4

D.6 If I am going to deliver my load within the time expected of me I must now travel at a speed that is

Route	% Slower	% A Little Slower	% Neither Slower nor Faster	% A Little Faster	% Faster
1	0.0	0.0	63.5	28.6	7.9
2	0.8	0.8	68.4	21.1	9.0
3	0.0	3.6	67.9	17.9	10.7
4	0.0	1.2	88.1	8.3	2.4
Total	0.2	0.7	69.9	21.9	7.4

KEY
Route 1 Melbourne - Sydney: Hume Highway
Route 2 Melbourne - Adelaide: Western Highway
Route 3 Brisbane - North Queensland: Bruce Highway
Route 4 Brisbane - South West Queensland: Warrego Highway.

TABLE 29. RESPONSES TO QD.5 AND EXPERIENCE IN DRIVING CURRENT TRUCK.

QD.5 Compared to last year, I now travel along this route at a speed that is

	Slower	A Little Slower	Neither Slower nor Faster	A Little Faster	Faster
Owner Driver					
No.	3	3	117	40	9
%.	1.7	1.7	68.0	23.3	5.2
Employee Driver					
No.	2	11	138	101	6
%.	0.8	4.3	53.5	39.1	2.3
Experience	%	%	%	%	%
0-5	1.6	0.0	81.0	15.9	1.6
5-10	1.6	3.3	50.4	43.9	0.8
10-15	0.0	3.1	55.7	37.1	4.1
15-20	3.1	7.8	60.9	25.0	3.1
20-25	0.0	0.0	55.1	42.9	2.0
25-30	0.0	4.5	59.1	22.7	13.6
30-35	0.0	6.3	81.3	12.5	0.0
35-40	0.0	0.0	55.6	11.1	3.3
>40	0.0	0.0	50.0	50.0	0.0

TABLE 30 PREFERRED SPEED LIMIT, EXPERIMENTAL GROUP *AND* ROUTE. n=444

	%	%	%				%
Preferred Speed Limit km/h	80-90 km/h Group	90 km/h Group	Route 1	2	3	4	Total
90	0.6	5.6	0.0	1.5	7.1	5.1	1.8
100	89.9	57.0	88.7	91.7	85.7	46.8	82.0
110	7.4	32.7	8.3	6.0	7.1	41.8	13.5
>=120	2.1	4.6	3.0	0.8	0.0	6.4	2.7
	100	100	100	100	100	100	100

SECTION 4 — SPEED OF TRAVEL - INFLUENCING FACTORS.

Drivers were asked to describe the factors that they took into consideration when they decided what speed they would travel at on the route they were travelling on when surveyed. They were asked to describe those factors for travel during the daylight and travel during the night.

Drivers were asked for their opinions and were not prompted for answers. These factors can, therefore, be considered to be those that truck drivers perceive to be the most important when they decide what speed they will travel at.

Responses were coded into the categories listed in Tables 31 and 32. These codes were established during piloting of the questionnaire. The total number of drivers who selected the factor described in each category and the number and proportion who chose that factor as their first, second, third and fourth and/or thereafter consideration when determining their speed of travel are also recorded in these tables.

4.1 DAY TIME *TRAVEL*

Seventeen drivers reported that they did not travel during the day. One driver did not respond. The following responses were given by the remaining 435 drivers (Section 4.3).

4.2 NIGET TIME TRAVEL

Six drivers reported that they did not travel during the night. One did not respond. The following responses were given by the remaining 446 drivers (Section 4.3).

TABU 31. FACTORS INFLUENCING SPEED DURING **THE** DAY

	Number/Proportion			
	Total	1st.	2nd.	3rd.	4th.& thereafter choice.
WEATHER	**260**	50/11.0	100/22.1	91/21.1	19/4.1
RADAR/POLICE	**250**	143/31.6	60/13.2	**30f6.6**	**17f3.7**
DENSITY OF TRAFFIC /NO.CARS ON ROAD	**249**	**68/15**	121/26.7	39/8.6	21/4.6
ROAD CONDITIONS	**152**	62/13.7	42/9.3	21/4.6	27/3.1
LOAD/WEIGHT CARRYING	85	**8f1.8**	17/3.8	24/5.3	36/7.8
RUNNING LATE/TIME SCHEDULE FOR DELIVERY	**70**	8/1.8	29/6.4	22/4.9	11/2:3
SAFETY	**64**	35/7.7	20/4.4	7/1.5	2/0.4
GENERAL DRIVING CONDITIONS	**49**	26/5.7	13/2.9	5/1.1	5/1.0
ALERTNESS/PHYSICAL	**47**	15/3.3	9/2.0	11/2.4	12/2.6
WELL-BEING OF DRIVER WHAT SUITS TRUCK	**25**	5/1.1	6/1.3	3/0.7	11/2.4
OTHER	**25**	11/2.4	6/1.3	5/1.1	3/0.6
ECONOMY	**24**	3/0.7	5/1.1	7/1.5	9/1.9
HEAT/TEMPERATURE	**23**	1/0.2	**5f1.1**	2/0.4	15/3.2
TOTALS		**435**	**433**	**267**	**188**

TABLE 32. FACTORS AFFECTING SPEED AT NIGHT

	Number/Proportion				
	Total	1st.	2nd.	3rd.	4th.& thereafter choice
WEATHER	305	101/22.3	128/28.3	61/13.5	15/3.2
DENSITY OF TRAFFIC /NO.CARS ON ROAD	259	84/18.5	112/24.7	46/10.2	17/3.6
RADARIPOLICE	191	83/18.4	59/13.1	25/5.5	23/5.1
ROAD CONDITIONS	138	50/11.0	29/6.4	2515.5	34/7.4
ALERTNESS/PHYSICAL	105	2615.1	24/5.3	3217.1	23/5.0
LOADIWEIGHT CARRYING	91	6/1.3	2114.6	2615.1	38/8.3
SAFETY	59	3617.9	16/3.5	4/0.9	310.6
RUNNING LATE/TIME SCHEDULE FOR DELIVERY	54	5/1.1	23/5.1	19/4.2	711.5
GENERAL DRIVING CONDITIONS	52	35/7.7	1212.6	4/0.9	1/0.2
OTHER	29	12/2.6	6/1.3	5/1.1	6/1.3
ECONOMY	23	2/0.4	3/0.7	9/2.0	9/1.9
WELL-BEING OF DRIVER WHAT SUITS TRUCK	20	3/0.7	6/1.3	5/1.1	6/1.3
HEAT/TEMPERATURE	14	3/0.7	2/0.4	3/0.7	6/1.2
Totals		446		264	188

4.3 DISCUSSION OF RESULTS

As the aim of this study is to examine the effect of an increase in the speed limit on driving behaviour it is important to emphasise the approach taken to .establish the categories used in this question and their implications.

A category referring to "speed limit" per se was not included in this question because not one driver in the pilot study suggested that that the speed limit was, in itself, a specific consideration when determining his speed. Speed limit was referred to only in association with the idea of its being enforced, and the chance of being detected if exceeding it.

This approach to categorization was borne out by the main study. Of the drivers who recorded a response in the "Other" category, none mentioned the "speed limit" per se as a consideration. The responses to the "Other" category are detailed below. The results below must be viewed with this background in mind.

The relative importance of the factors considered to be important to decisions about speed of travel were remarkably similar for both daylight and night time driving. Generally speaking, the order of importance of the factors in the above tables were the same, with the exception of alertness and physical well-being of the driver which was rated considerably higher for night time travel, and a slightly higher rating for the problem of running late and meeting the prescribed schedule during the day.

4.31 Speed limit and the potential detection of speeding

In both the daytime and the night time, consideration of the potential presence of police, radar, or devices for the detection of speeding was one of the top three factors considered by drivers when selecting their speed of travel. The potential detection of speeding was mentioned as a necessary consideration by the second highest number of drivers during the day (57.47% of

respondents) and the third highest number of drivers during the night (42.82% of respondents). For those drivers who mentioned it, this factor was by far their first choice; 31.6% of the sample saw this to be the major consideration for daytime travel and 18.4% did so for night time travel .

Most importantly, when all the major considerations (first choices of all the participating drivers) were considered, fear of detection of speeding was the major consideration *of* the majority for daytime travel and of a considerable proportion for night time travel. Of the 435 responses indicating drivers' major considerations when deciding their speed *of* travel during the day, 143 (32.9%), reported that the potential for being detected exceeding the speed limit was their major consideration. When travelling at night, 446 (22.65%) respondents reported that fear that they would be detected if speeding was their first consideration.

4.32 Weather Conditions

The factor most often mentioned for both daylight and night time travel was weather. The prevailing weather conditions were considered to be of particular importance at night. Three hundred and five drivers reported weather to be a consideration when travelling at night and 22.3% and 28.3% of those chose weather as their major or second consideration respectively.

Of all factors considered by the responding drivers to be the most important at night (that is, of all first choices) the highest proportion, 22.65% (101/446) selected weather conditions. Of all factors considered to be of secondary importance at night, 29.20%, the highest proportion of drivers reported that they considered the weather conditions. Weather conditions were recorded more often and were chosen as the first and second most important considerations by larger proportions of drivers than enforcement of the speed limit for night time travel.

Of all reported factors, weather was recorded most often as one of the necessary considerations during the day. However, for daylight travel, the highest proportion of

the drivers who recorded weather conditions considered it as their second choice (22.1%). Consideration of the prevailing weather conditions accounted for 23.09% of the factors considered as the second most important consideration by all drivers. First choice for daylight speed decisions was speed limit enforcement (see above).

4.33 Density of Traffic

Traffic flow was a major consideration for both night and daytime travelling. The third highest number of drivers (249) reported it to be their consideration when determining their speed of travel in the daytime. It was the second most popular consideration for night time travel (259).

Twenty-seven percent (26.7%) and 24.7% of the drivers who reported taking traffic density into consideration reported it as being of second most importance for day and night travel respectively. This was the most frequently mentioned second choice for daytime travel (27.94%) and the second most frequently mentioned second choice for night time travel (26.40%).

4.34 General Road Conditions

General road conditions were considered to be important to speed decisions by the fourth largest proportion of drivers for both day and night travel. Of those who took this into consideration most selected it as the most important factor (daytime travel = 13.7%; night time travel = 11.0%).

Drivers were asked to further specify their meaning when reporting this factor. The types of answers recorded are detailed in table 33.

TABLE 33. ROAD CONDITIONS AFFECTING SPEED OF TRAVEL.

Road Conditions	No. of Respondents Day	Night
Road surface	34	31
Rough road	38	33
Potholes	14	9
Rough edges	11	I
Narrow roads/bridges	17	11
Roadworks in progress	16	11
Bad corners	2	–
Sun	3	–
Speed limits	3	–
Detours	2	–
Traffic	2	1
Steep hills	1	–

4.35 Load

The load being carried was considered to be the fifth most important factor during the day but was seen to be less important than the alertness of the driver during the night. Interestingly, the load carried, although relatively frequently included by drivers as a consideration affecting their speed of travel, was most often mentioned as their fourth consideration and least often as the first and most important factor for travel throughout day and night.

4.36 Alertness, fatigue and physical well-being of driver

This factor was found to be important for night time travel. 105 drivers, the fifth highest proportion, reported consideration of this factor at night . Most interestingly, it was almost equally mentioned as the drivers' first, second, third or even fourth or less important consideration.

4.31 Safety, schedules and general driving conditions

The issues of safety, the driver's time schedule for delivery and general driving conditions were mentioned by drivers with moderate frequency.

It is interesting to note that, of those drivers who mentioned each of these factors, most selected safety and general driving conditions as their first choice for travel at all times. The driver's expected time of arrival was most often mentioned as a consideration that would be considered to come secondary to some other influencing factor or even of third importance. This response is consistent with drivers' reports that they have not needed to increase their speed to meet their schedules relative to last year (Section 3).

Drivers were asked to further explain what they meant by "general driving conditions". Their responses were noted separately, listed in the appropriate category marked as their second choice or described as "Other". This procedure will have contributed to the proportion found to first consider general conditions noted above.

General driving conditions mentioned are listed in Table 34. "Other" answers have been recorded in the Table 35.

TABLE 34. GENERAL DRIVING CONDITIONS AFFECTING SPEED OF PEOPLE

	No. of Respondents	
General Conditions	Day	Night
Fog	8	24
Visibility	5	6
Wind	2	-
Speed Limit	1	-

4.38 Characteristics of the truck, economy, heat & temperature and other factors.

These remaining factors and alertness during the daytime were mentioned more rarely by drivers and were considered

almost equally as being of first, second or thereafter importance. The only exception was the category of "Other".

Drivers who reported considering some factor not included in the available categories most often reported this factor to be their most important consideration. The table of 'Other' issues reported to influence some drivers' choice of speed of travel is below. (Table 35).

TABLE 35. "OTHER" FACTORS AFFECTING SPEED OF TRAVEL

"Other"	Day	Nlght
Oncoming headlights on high beam	–	9
Caravans	8	–
Livestock/wildlife	2	6
The driver in front	3	2
School buses/children	1	–
Driver experience	2	2
Hitchhikers (slowing down)	1	–
RTA	2	1
Knowledge of road	–	1
Way load is carrying	–	2

4.4 THE EFFECT OF EXPERIMENTAL GROUP, DRIVING EXPERIENCE AND TRUCK OWNERSHIP ON DECISIONS ABOUT SPEED OF TRAVEL.

The drivers' responses to this section of the questionnaire were cross-tabulated by their experience in driving their truck, truck ownership and by experimental group and were analyzed using the Chi-squared test of independence.

The results obtained are summarized in Table 36 in which all significant results at $p = 0.05$ are recorded.
The following paragraphs summarize the most important findings.

4.41 Driving experience and experimental group and general driving conditions.

It is apparent from Table 36 that drivers' opinions about the contribution of a number of factors to their speed of travel decisions were not affected by their experience, truck ownership nor experimental group.

The report that 'general conditions' were important to speed of travel was considered significantly differently only by drivers with different experience when driving at night and by drivers of different experimental groups when travelling throughout the day.

TABLE 34 SIGNIFICANT RELATIONSHIPS BETWEEN FACTORS INFLUENCING SPEED, EXPERIENCE, OWNERSHIP AND EXPERIMENTAL GROUP.

		WEATHER	RADAR/POLICE SPEED LIMIT	TRAFFIC DENSITY	ROAD CONDITIONS	LOAD	SCHEDULE	SAFETY	GENERAL DRIVING CONDITIONS	ALERTNESS/ FATIGUE	TRUCK CHARACTERISTICS	OTHER	ECONOMY	HEAT/TEMPERATURE
DRIVING EXPERIENCE	Day								*					
	Night													
TRUCK OWNERSHIP	Day												*	
	Night												*	
EXPERIMENTAL GROUP	Day		*	*	*				*			*		*
	Night		*	*	*			*		*		*		*

Key: * = significant relationship at $R \leq 0.05$

For night time travel, there was a general trend for drivers to report "general conditions" as their major consideration as their experience in driving increased. Those with 20-35 and 30-35 years experience were the exception. They mentioned taking the general conditions into account somewhat less frequently than the other drivers. Those with 35-40 years experience mentioned the factor frequently but as a less important consideration. (x^2 = 69.249; d.f.= 32; p=0.0001.

During the day, general conditions was more often the response of drivers from the 90km/h experimental group. 20.5% of the 90 km/h group mentioned this factor and 10.7% of them considered it to be their first choice. Only 7.6% of the 80-90 km/h group cited this factor and only 4.1% of as their first choice (x^2=23.766; d.f.=7; p=0.0013).

Because drivers' explanations of their meaning when responding in this way was recorded as their second, third and further choices, significant differences in this category reveal where differences lie in the tendency for drivers to give an all-encompassing, summarized view of how they make their speed decisions and the need to be prompted further to specify. Significant differences in the following responses are of more interest to the aim of the study.

4.42 Truck Ownership and Speed decisions

Understandably, economy was considered by far more owner drivers than employed drivers when determining speed of travel (Table 37) (daytime x^2=21.440; d.f.=8, p=0.0061: night time x2=20.426; d.f.=10; p=0.0255). This was the only factor significantly related to truck ownership.

TABLE 37. TRUCK OWNERSHIP, ECONOMY AND SPEED OF TRAVEL

		% Sample chose factor	% 1st choice	% 2nd choice
Day Travel	Owner Operator	9.7	1.1	8.5
	Employee Driver	2.6	0.4	2.8
Night Travel	Owner Operator	10.0	0.6	8.5
	Employee	2.7	0.4	2.8

4.43 Experimental Group and Speed Decisions

Significant relationships between the experimental group and drivers' decisions about their speed of travel were of considerable interest to this study. Overall, and as indicated in Section 3, the factors that the two experimental groups viewed differently in importance to speed of travel decisions were those related to the routes of travel i.e. traffic flow, road conditions etc. The importance of the speed limit was considered differently by the two groups as a difference in the possibility of being detected exceeding it.

Experimental group and the risk of detection of speeding

Those drivers for whom the speed limit had recently been raised from 80 to 90 km/h were far more likely to mention police and radar and the possibility of detection of speeding as a consideration when they determined their speed of travel than were the group who had been travelling at 90km/h for over a year. In addition, this factor was more likely to be chosen as the most important consideration by the 80-90km/h group. Although the

overall importance of this factor decreased for both experimental groups at night this same pattern was observed for both situations.

These results are detailed in Table 38. (x^2 daytime=35.902; d.f.=6; p=0.000. x^2night time=41.223; d.f.=7; p=0.000).

TABLE 38. EXPERIMENTAL GROUP AND CONSIDERATION OF DETECTION OF SPEEDING AS SPEED DECISION

		% Sample chose factor	% 1st choice	% 2nd choice
Day Time	80-90Km/h Group	43.2	20.6	22.7
	90 Km/h Group	38.4	11.6	26.8
Night Time	80-90 Km/h Group	58.9	37.0	22.1
	90 Km/h Group	43.7	15.2	28.6

Experimental group and traffic flow.

Traffic flow was more often a consideration of the 80-90 km/h group of drivers and more often a first consideration for both day and night travel (x^2 daytime=29.532; d.f.=7; p=0.001. x^2night time= 41.233, d.f.=7; p=0.000. Table 39).

TABLE 39. EXPERIMENTAL GROUP AND TRAFFIC FLOW AS SPEED DECISION

		% Sample chose factor	% 1st choice	% 2nd choice
Day Time	80-90 K Group	56.9	17.0	39.9
	90K Group	49.1	8.9	40.2
Night	80-90 K Group	63	22.3	40.8
	90K Group	39.3	7.1	32.2

Experimental group, road conditions, temperature and 'other' factors.

Road Conditions was a factor of considerably greater importance to those travelling in the 90km/h experimental group. It would seem that drivers travelling in Queensland were far more often concerned about the effect of poor road conditions on their speed and safety and saw this factor has having far greater priority for their speed decisions than the drivers who travelled in Victoria along the Victoria-NSW and Victoria-South Australia routes for both day and night travel (x^2 daytime=94.777; d.f.=10; p=0.00. x^2 night=57.115; d.f.=9; p=0.000)

Understandably, heat and temperature considerations were more of an interest to the drivers travelling in the hotter climates, that is the 90 km/h group (x^2day=30.018; d.f=8; p=0.0002. x^2 night=17.392; d.f.=7; p=0.0150 (Table 40).

TABLE 40. EXPERIMENTAL GROUP, ROAD CONDITIONS, AMBIENT TEMPERATURE, 'OTHER' FACTORS *AND* SPEED OF TRAVEL

Group	% of Sample			% 1st Choice			% 2nd Choice		
	RC	Temp	0th.	RC	Temp	0th.	RC	Temp	Oth.
Day									
80-90Km/h	22.3	2.6	3.2	7.6	0.3	1.2	14.7	2.4	2.1
90 Km/h	67.9	12.5	12.5	32.1	0.0	6.3	35.7	12.6	6.3
Night									
80-90Km/h	22.3	2.3	3.5	6.7	0.9	1.8	15.6	1.5	1.8
90 Km/h	55.4	5.4	5.2	24.1	0.0	5.4	31.3	5.4	9.0

Key

RC = Road Conditions
Temp = Temperature
0th. = Other
% of Sample = % of sample who selected the factor

Factors other than those available in the provided categories were also mentioned more frequently by the 90 km/h group (x^2day= 19.179; d.f.=5; p=0.0018. x^2night=23.433; d.f;=5; p=0.0003). This is recorded in Table 40 above. (Also refer to Table 35).

Experimental group and safety and alertness

The factors most often mentioned as important to speed of travel decisions could all be seen to contribute to driving safety. However, "safety" per se was mentioned as a discrete and separate factor of consideration by some drivers.

In addition, the importance of "safety" when determining speed of travel at night was viewed differently by drivers from different experimental groups.

Twelve percent (12%) of the 80-90 kmlh group referred to "safety" with 8.8% of that number considering it to be their first priority. However,while 16.1% of the 90 km/h group mentioned "safety" only 5.4% of those drivers gave it as their second, third or less important consideration. (x^2=18.728; d.f.=5; p=0.0022).

Alertness of the driver when travelling at night was also considered to be of significantly different priority by the two experimental groups.

Alertness was mentioned somewhat more frequently and as a first consideration by the 90 kmlh group. 24.1% of the 90 kmlh group reported this factor with 8.0% recording it as first choice. 22.9% of the 80-90 km/h group recorded it with 5.0% as first choice (x^2=15.227; d.f.=7; p=0.0332).

SECTION 5 SPEED DISPERSION AND SAFETY

5.1 RESPONSES TO SPECIFIC SPEED DISPERSION QUESTIONS.

Of particular interest to decisions concerning truck speed limits is the issue of speed dispersion and road safety. The aim of this study was to 'determine truck drivers' opinions as to the safety or danger of having speed limits for trucks that are lower than speed limits for cars.

Two questions pertaining to speed dispersion were of interest :

1. Do truck drivers believe that it would be safer for cars and trucks to have equal speed limits?

2. If truck drivers see speed dispersion as a danger, is this taken into account when they decide what speed to travel at when travelling with other vehicles? If this is so, would it be more realistic, and indeed fairer, to legislate accordingly?

Drivers were asked the extent to which they agreed with two statements about speed dispersion:

Q A.l Having different speed limits for cars and trucks is dangerous.

Q A.3 A slower speed limit for trucks is often dangerous because, on one lane highways, other motorists have to pass them.

The vast majority of drivers agreed with both the Section A statements indicating that they believe that speed dispersion is a danger to road safety.

TABLE 41. DRIVERS' OPINIONS ABOUT SPEED DISPERSION.

	% S. Agree	% M. Agree	% N A or D	% M.Disagree	% S.Disagree
QA1.	82.7	7.1	3.1	2.0	5.1
QA3.	87.9	4.6	2.6	1.8	3.1

Key: S. Agree = Strongly Agree
M. Agree = Mildly Agree
N. or Disag. = Neither Agree nor Disagree
M. Disag. = Mildly Disagree
S. Disag. = Strongly Disagree

Interestingly, there was a tendency for drivers to more thoroughly agree with statement A.3 in which an instance where danger may occur due to speed dispersion factors was illustrated.

A significant relationship between experimental group and attitudes to speed dispersion were found for question A.l (x^2 A.1=23.950; d.f.= 4; p=0.0001). Although by far the majority of drivers agreed with the definitive statement that different speed limits is dangerous, a slightly higher percentage of the 90 km/h group drivers chose to disagree than did the 80-90k drivers (80-90 km/h group=4.2%; 90k group=16.2%).

This tendency for a small proportion of drivers to disagree was not evidenced for statement A.3 where the statement did not categorically disapprove of speed dispersion. There was no significant relationship between experimental group and that question.

5.2 REPORTED SPEED BEHAVIOUR WHEN DRIVING WITH *OTHER* VEHICLES.

In Section D the drivers were asked to rate the effect of having other cars on the road with them on their speed of travel.

Q D.l Compared to when I am travelling on the road alone, when there are cars travelling in the same direction with me I usually travel

Slower	A Little Slower	Neither Slower nor Faster.	A Little Faster	Faster
1	2	3	4	5.

By far the majority of drivers reported that their speed of travel was not altered when travelling with cars on the road (69.1%). Indeed, the next largest proportion reported that they travelled more slowly when with cars (22.9%).

These responses are more clearly interpretable when compared to the reported average speed of travel of the drivers. Reference to Section 3 shows that by far the majority of drivers drive at around 100km/h in both the daytime and the night-time (daytime =69.6%): night-time=75.4%).

It would seem that drivers do not approve of different truck speed limits and that, in effect , the speed at which the drivers choose to travel eliminates any gap between the speed of the cars and trucks, thus eliminating the perceived danger.

TABLE 42. TRUCK SPEED WHEN TRAVELLING WITH *CARS*.

QUESTION D1

	%
Slower	4.3
A Little Slower	18.6
Neither Slower Nor Faster	69.1
A Little Faster	6.3
Faster	1.8

SECTION 6 - CONVOYS

6.1 QUESTIONS SPECIFICALLY ADDRESSING CONVOYS.

Of interest to the setting of safe speed limits is the issue of convoys.

Two issues were addressed in the survey:

Firstly, do truck drivers currently think they should be allowed to travel in convoys and,

Secondly, what are the truck drivers' attitudes to safety, speed dispersion and travelling in convoys?

Truck drivers were asked the extent to which they agreed with two direct statements about travelling in convoys:

1 (QA.2). Trucks should not be allowed to travel in convoys of three or more trucks.

2 (QA.4). Travelling in convoys would be safe if the speed limits for cars and trucks were the same.

The spread of responses obtained in both experimental groups are detailed in Table 39.

6.11 QA.2

Truck drivers' current attitudes to travelling in convoys were fairly evenly spread along the continuum of possible responses ranging from strongly agree to strongly disagree. Although a small majority did mildly or strongly agree that trucks should not travel in convoys (41.6%), 34.3 percent supported convoy travel and 24.1% of the drivers chose to neither agree nor disagree with the statement.

Responses to this statement were significantly related to experimental group (x^2=12.085; d.f.=4; p=0.0167). The differences between groups was not however, a difference in the general pattern of response. Responses from both groups were somewhat evenly spread with, indeed,

TABLE 43. ATTITUDES TO DRIVING IN CONVOYS.

	S. Agree	M. Agree	NA.or Disag.	M. Disag.	S. Disag.
QA.2 80-90K Group	22.0	19.4	26.7	13.8	18.2
90K Group	30.6	11.7	16.2	20.7	20.7
Total	24.1	17.5	24.1	15.5	18.8
QA.4 80-90K Group	58.4	15.8	12.3	7.6	5.9
90K Group	58.9	11.6	3.6	10.7	15.2
Total	58.5	14.8	10.2	8.4	8.2

Key: S. Agree = Strongly Agree
M. Agree = Mildly Agree
N. or Disag. = Neither Agree nor Disagree
M. Disag . = Mildly Disagree
S. Disag. = Strongly Disagree

approximately the same slight pro majority (% agree in 80-90k group= 41.4%; % agree in 90k group = 42.3%). The 90k group was less likely to be unable to take a clear stand on the issue presented in the statement and were slightly more likely to disagree with it than were the 80-90k group (Table 43).

The statement A.2 was definitive and allowed for no exception. Thus, these results may suggest that a considerable proportion of truck drivers may not see the issue of convoys as being so simply addressed and that a number of excepting and extenuating conditions and circumstances may apply which require discussion.

This is an issue upon which opinion is divided and which may require further investigation.

6.12 QA.4

Although opinions were spread about the safety of travel in convoys under their current travelling conditions drivers were far more likely to agree that travelling in convoys would be safe if truck speed limits were the same as car speed limits. Fifty-nine percent strongly agreed (58.5%), and in total, 73.3% agreed that travelling in convoys would be safe if trucks were not travelling at speed limits lower than cars. In addition only a small proportion were unwilling to make a definitive answer to this statement (10.2%) (Table 43).

Experimental group was again significantly related to opinion only to the extent that fewer 90 kmlh group drivers were undecided and slightly more disagreed (x^2=17.287; d.f.= 4; p=0.0017).

6.2 THE EFFECT OF CONVOYS ON SPEED OF TRAVEL.

In order to determine truck driver speed behaviour when in convoys drivers were asked to indicate the effect of convoy travel on their speed of travel relative to when travelling alone in both the daytime and the night time.

Four hundred and twenty-nine drivers responded to the daytime question and 436 drivers to the night time question. Those who refused reportedly did so because they "did not drive in convoys". However, this question cannot be taken as an accurate measure of the extent to which drivers travel in convoys because it cannot be established that some of the drivers who do not travel in convoys did not select a 'neither slower nor faster' response.

The majority of drivers reported that their speed of travel was neither increased nor decreased when travelling in convoys in both the daytime and night-time, However, a slight increase in those who reported going "a "little faster" was evident for night time travel (daytime = 15.2%; night time = 22.8%).

Responses to the question detailing travel in convoys during the daytime were significantly related to experimental group (x^2=12.566; d.f.=4; p=0.0136). A larger proportion of drivers from the 90 km/h experimental group reported travelling a little more slowly when in convoys during the day than was reported by the 80-90 km/h group.

TABLE 44. TRAVEL IN CONVOYS - DAYTIME OR NIGET TIME

	Day Travel (n=429)			Night Travel (n=436)		
	80-90km/h	90km/h	Total	80-90km/h	90km/h	Total
Slower A Little	2.7	4.0	3.0	3.0	3.9	3.2
Slower Neither	10.7	22.8	13.5	11.7	20.6	13.8
Slower Nor Faster A Little	70.1	62.4	68.3	67.4	60.8	65.8
Faster	14.6	7.9	13.1	14.7	11.8	14.0
Faster	1.8	3.0	2.1	3.3	2.9	3.3

6.3 CONVOYS - SUMMARY

The implications of the information about travel in convoys obtained in this study for policy regarding increase of speed limits to 100km/h are as follows:

1. Truck drivers, in general, seem to support travel in convoys. This will need to be considered when policy is addressed.

2. Travelling in convoys is seen as safer when speed differences are eliminated. However, although this could be viewed as a potential safety disbenefit of increasing the speed limit to 100 km/h it is important that this information be considered with regard to the current driving practices. Most drivers report that they do not alter their speed when travelling in convoys or, at least travel more slowly, and drivers report an average speed of travel at around 100 km/h. The official elimination of speed dispersion may not, in effect, alter current convoy travel behaviour.

3. Further study of travel in convoys recommended.

SECTION 7 -PERCEIVED CAUSES OF ROAD CRASEES.

The drivers were asked to indicate, firstly, what they believed to be the major cause of crashes and secondly what were, in their opinion, other common causes of crashes.

Open responses were taken. Drivers were not prompted nor given examples. The responses were categorized into the codes listed in the Table 45 below. These codes were established during the extensive trialling and piloting stage of the questionnaire development (See Methodology)

The responses obtained from the full sample of drivers are detailed in Table 45.

Experimental group and perceived causes of road crashes.

The drivers' reported perceptions about the causes of traffic crashes were subjected to chi-square analysis by the experimental group and by the total distance travelled. The total distance travelled per annum can be taken to be an equivalent measure of the amount of time spent on the road. It was found that the drivers' perceptions about the causes of crashes were rarely influenced by the distance that they travelled per year. However, most of the factors mentioned were significantly related to experimental group.

Perceptions of causes of crashes significantly influenced by distance travelled per annum and experimental group are recorded in Table 46 below.

The pattern of drivers' responses to the question of the causes of road crashes fell into logically explicable groupings. These groups are defined below, the drivers' overall responses are delineated and any differences between experimental groups and travellers of different distances defined.

TABLE 45. CAUSES OF CRASBES.

	NUMBER/PROPORTION				
	Total	1st.	2nd. choice.	3rd.	>=4th.
Impatient! Inexperienced1 Unskilled Car Drivers.	194	83118.3	59113.0	3417.5	1813.9
Cars Overtaking1 Cutting in front	161	3116.8	60113.2	4419.7	2615.7
Lack driver education/driver ignorance	157	4419.7	74116.3	2816.2	1112.4
Inexperienced Drivers (in general)	142	57112.6	4119.1	2014.4	2415.2
Driver Fatigue (In general)	130	47110.4	39/8.6	21/4.6	23/4.7
Wet Weather	121	1914.2	2415.3	3617.9	4219.2
Road Conditions	98	2114.6	2315.1	1814.0	36/8.0
Car Drivers	86	47110.4	2515.5	1012.2	310.6
Speeding	84	1713.8	2014.4	2415.3	23/4.9
Slow Drivers	82	2214.9	2014.4	2415.3	1613.5
Other	71	2415.3	1914.2	1012.2	18/4.0
Inexperienced Truck Drivers.	66	16113.5	1814.0	1312.9	19/4.1
Fatigue - Truck Driver.	58	1513.3	1413.1	1212.6	17/3.6
Fatigue - Car Drivers.	34	511.1	1112.4	711.5	1112.5
Drunk Drivers	32	010.0	511.1	1212.6	1513.0
Police.	13	310.7	110.2	210.4	7/1.4
TOTAL		453	453	315	309

TABLE 46. SIGNIFICANT RELATIONSHIPS BETWEEN PERCEIVED CAUSES OF CRASHES, EXPERIMENTAL GROUP AND DISTANCE TRAVELLED PER YEAR.

	Impatient/Unskilled Car Drivers.	Cars Overtaking/Cutting in front.	Lack driver education/ driver ignorance.	Inexperienced drivers (in general)	Driver fatigue (in general)	Wet weather	Road conditions	Car drivers	Speeding	Slow drivers	Other	Inexperienced truck drivers	Fatigue - truck drivers	Fatigue - car drivers	Drunk drivers	Police
EXPERIMENTAL GROUP	*	-	*	•	*	*	*	-	*	*	-	-	*	*	*	-
X/m TRAVELLED PER YEAR	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	*

Key: * = Significant relationships at $\alpha = 0.05$

7.1 CAR DRIVERS, CAR DRIVING AND TRAFFIC CRASHES.

7.11 Sample Response

Interestingly, the top two reasons for crashes predominantly reported by the truck drivers were both directly related to car drivers.

It was the opinion of by far the largest number of drivers that most crashes were caused by impatient, inexperienced and unskilled car drivers. Indeed, by far the largest proportion of drivers (18.3%) perceived this to be the most common cause of crashes. In addition, this factor also accounted for the third highest proportion of second and third most important reasons given for road crashes (13.0% ($^{53}/_{433}$) and 10.8% ($^{34}/_{315}$) respectively).

Of the drivers who mentioned this factor most recorded it was the most (18.3%) or second most common (13.0%) cause of accidents.

The second most strongly supported reason for crashes was cars overtaking or cutting in front of trucks. Interestingly, when mentioned, this factor was most often seen as a secondary (13.2%) or third most important (9.7%) cause of crashes. Cars overtaking accounted for one of the highest proportions of causes seen to be second most important to crashes (13.25% = $^{60}/_{453}$).

Other factors mentioned relating specifically to car drivers were mentioned by only a moderate number of drivers. "Car Drivers" per se was mentioned by 86 drivers. (The median response rate for all factors was 85). Interestingly, however, where this factor was mentioned by a driver it was by far most often considered by him to be the most or second most important contribution to road crashes. Eighty four (83.73%) indicated this. In addition, this factor accounted for the third highest proportion of first choices (10.4%), equal to "driver fatigue".

Fatigued car drivers was rarely mentioned and will be discussed below.

Implications for study aims.

1. It would seem that it was the opinion of most truck drivers that it is the poor quality driving of other drivers, especially car drivers, that is the predominant contributor to road crashes. In addition, where car driving behaviours were mentioned at all as contributing to road crashes they were considered to be the most important or, at least, the second most common causes.

Understandably, the driving behaviour of car drivers most particularly criticized by the truck drivers were those that specifically related to themselves, their needs as truck drivers and the needs of their trucks.

2. When the drivers' opinions about car drivers and overtaking cars is compared to their condemnation of the safety of speed limit differences (Section 2) it would seem to be most decidedly the opinion of truck drivers that there would only be safety benefits in increasing the speed limit to 90 km/h. and, indeed, by further increasing the speed limit to eliminate speed dispersion differences.

3. In addition, road safety authorities may be advised to further investigate the behaviour of car drivers when meeting trucks on the road and the knowledge of both car and truck drivers about other drivers. The possibilities of car and truck driver education strategies may be considered.

7.12 The Influence of Experimental Group

Overtaking Cars and "Car Drivers"

Drivers' consideration of the importance of cars inappropriately overtaking trucks and of 'car drivers' per se to road crashes was not significantly related to experimental group (Table 46).

Impatient/Unskilled Car drivers and Car Driver Fatigue

The 90 kmlh group tended to mention the contribution of impatient, unskilled drivers and driver fatigue somewhat more often than the 80-90 kmlh group (Table 47).

While 50.9% of the 90 kmfh drivers perceived that impatient and unskilled drivers contributed to road crashes this was the case with 40.2% of the 80-90 kmfh group (x^2=18.977; d.f.=7; p=0.0083). In the 90 kmfh group 11.6% mentioned car driver fatigue compared to 6.2% of the 80-90km/h group (x^2= 18.370; d.f.=7; p=0.0104). In both cases drivers in the 90 kmlh group tended as well to mention these factors as third or less important contributions to crashes more often than drivers in the 80-90 kmfh group.

TABLE 47. EXPERIMENTAL GROUP, CAR DRIVERS AND CRASEES

Factor	Experimental Group	Percentage total selection	most	2nd Important	3rd
Impatient Unskilled Car Drivers	80-90 km/h	40.2	17.0	13.2	9.9
	90 kmlh	50.9	22.3	12.5	16.1
Car Driver Fatigue	80-90 km/h	6.2	1.2	2.6	2.4
	90 km/h	11.6	0.9	1.8	9.0

7.13. Distance Travelled per Annum

Interestingly drivers' tendency to consider car drivers and car driving per se as a cause of crashes, rather than

specific examples of dangerous car driving behaviours, and to see this factor as the most or second most important contribution to road crashes increased with the number of kilometres travelled per year, that is, with exposure to roads and road conditions (x^2=126.325; d.f.=40; p=0.00).

TABLE 48. DISTANCE TRAVELLED, CAR DRIVERS AND CRASHES.

Factor	Distance Travelled Per Annum ('000)	Percentage factor selection	most Important	2nd	3rd
Car Drivers	1-99	6.5	6.5	0.0	0.0
	100-199	16.9	10.0	4.0	2.0
	200-299	15.9	7.6	4.5	3.8
	300-399	24.3	12.9	7.1	3.4
	400-499	36.4	22.7	13.6	0.0
	500-599	45.5	27.3	18.2	0.0
	600-699	50.0	0.0	50.0	0.0
	700-799	33.3	33.3	0.0	0.0
	> 800	40.0	0.0	20.0	20.0

Drivers' opinions about the influence of the specific car driving behaviours mentioned in the study were not influenced by the distance travelled per annum.

7.2 FACTORS ATTRIBUTABLE TO BOTR CAR AND TRUCK DRIVERS

7.21 Sample Responses

The factors contributing to crashes given by the third, fourth and fifth highest numbers of drivers all related to driving behaviours of all road users.

Lack of driver education and driver ignorance of appropriate driving behaviours to deal with all road situations was given as a reason for accidents by 157 drivers. This factor was mentioned by the highest proportion of drivers as the second most important factor contributing to accidents (16.3%).

Inexperience in driving, whether it be car or truck driver inexperience, was mentioned by 142 drivers. This factor was mentioned by the second highest proportion of drivers as the most important factor contributing to accidents (12.58%) and also accounted for 9.5% of the drivers' choices of second most common causes.

Fatigue was more often mentioned as a contribution to crashes on the part of drivers in general than specifically in relation to car or truck drivers only. When mentioned it was more likely to be considered to be a factor of first or secondary importance to road crashes (10.4 and 8.6% respectively). Driver fatigue was given as the most common cause of crashes by the third highest proportion of drivers (10.4%).

Driving while under the influence of alcohol was not seen to be a substantial cause of road crashes. Drunk driving was only mentioned by 32 drivers and predominantly as a fourth choice.

1.22. Experimental Group

Drivers' perceptions of the contribution of all of these general driving factors to road crashes were significantly related to experimental group.

Lack of driver education, ignorance of safe driving procedures and drunk driving were more often mentioned by the 90 km/h experimental group. Of the 80-90 km/h group 29% mentioned this factor. A much larger proportion in the 90 km/h group (51.8%) were concerned about a general deficiency in driver education and ignorance (x^2=25.075; d.f.=6; p=0.0003).

Of the 90 km/h group 13.4% mentioned the problem of driving under the influence of alcohol. This was considered by 5% of the 80-90 km/h group. The 90 km/h group tended to be more likely to include this factor as a one of the less common contributions to crashes (x^2=23.238; d.f.=9; p=0.0057).

Lack of driving experience in both car and truck drivers was found to be of greater concern to the 80-90 kmfh group; 36.1% of the 80-90 km/h drivers mentioned this

factor compared with only 17% of the 90 kmfh drivers (x^2=24.071; d.f.=9; p=0.0042); 30.8% of the 80-90 kmlh group were concerned about general driver fatigue compared with 22.3% of the 90 kmfh group (x^2=26.488; d.f.= 9; p=0.0017). For both these factors, the 80-90 km/h group drivers predominantly perceived these factors to be of foremost or second most concern whereas the 90 kmfh groups' perceptions of their importance were well spread.

TABLE 49. EXPERIMENTAL GROUP, ALL DRIVERS AND CRASEES

Factor	Experimental Group	Percentage total selection	most Important	2nd	3rd
Lack Driver Education1	80-90 kmlh	29.0	9.4	12.9	6.8
Driver Ignorance	90 km/h	51.8	10.7	26.8	14.3
Drunk Driving	80-90 kmfh	5.0	0.0	0.9	4.1
	90 km/h	13.4	0.0	1.8	11.7
Inexperience All Drivers	80-90 kmlh	36.1	15.8	10.6	9.7
	90 kmfh	17.0	2.7	4.5	9.9
General Driver Fatigue	80-90 kmfh	30.8	12.6	9.4	8.9
	90 kmfh	22.3	3.6	6.3	12.6

7.23 Distance Travelled per annum

None of the drivers' perceptions of the contribution of these general driving factors to crashes were significantly related to kilometres travelled per annum.

1.3 PERCEIVED CONTRIBUTION OF TRUCKS AND TRUCK DRIVERS TO ROAD CRASEES.

7.31 Sample Responses

Trucks, truck drivers or truck driving behaviours were not considered to be common causes of crashes .

Only two factors directly related to truck drivers were mentioned as contributing to crashes. Moreover, only 124 drivers in total mentioned these factors at all:
66 drivers mentioned truck driver inexperience, 58 mentioned truck driver fatigue. In both cases these factors were seen to be of first, second , third or fourth importance by similar proportions of drivers.

1.32 Experimental Group

Drivers' perceptions of the influence of inexperienced truck drivers were not related to experimental group.

Concern for truck driver fatigue contributing to crashes was more often displayed by the 90km/h group. This was mentioned by 21.4% of this group compared to 10% of the 80-90 kmlh group. The largest proportion of the 90 kmfh group saw it as their foremost consideration (x^2=23.820; d.f.=9; p=0.0046).

TABLE 50. EXPERIMENTAL GROUP, TRUCK DRIVERS AND CRASHES

Factor	Experimental Group	Percentage total selection	most	2nd	3rd Important
Truck Driver Fatigue	80-90 km/h	10.0	1.8	2.6	5.6
	90 km/h	21.4	8.0	4.5	9.0

7.33 Distance Travelled per Annum.

Concern for the contribution of truck driving behaviour to crashes was not related to total yearly distance travelled.

7.4 WET WEATHER AND ROAD CONDITIONS

7.41 Sample Responses

Wet Weather and Road Conditions were perceived to contribute to road crashes far more often than truck driver and truck driving behaviour but rather less than car driver behaviour and general driving behaviour of all road users.

Interestingly, however, when these factors were mentioned they were more often mentioned as the drivers' third or fourth choice of contributory agent.

Wet weather was mentioned as the factor of fourth importance by the highest proportion of drivers and of third importance by the second highest proportion; 7.9% and 9.2% of the sample of drivers selected wet weather as the third and fourth most common cause of accidents respectively.

Road Conditions were mentioned as fourth choice by the second highest proportion of drivers (8.0%).

The types of road conditions mentioned are detailed in Table 51.

TABLE 51. ROAD CONDITIONS AND CRASHES

Road Conditions	Number of Respondents
Road Surface	15
Rough roads	17
Narrow roads	20
Rough edges	11
Wet/slippery roads	5
Potholes	4
Corners	4
Bad bends	2
Fog	

1.42 Experimental Group

Wet weather was more often mentioned as a contribution to crashes and somewhat more frequently as a factor of foremost consideration by the 80-90 km/h group (29.0%) than by the 90 km/h group (19.6%). This result is consistent with the types of climates encountered by each group at the time of year of the study. The 90km/h group, from Queensland, travel in hotter and somewhat drier conditions during the winter months.

Interestingly, the 90 km/h group (35.7%) were more concerned with road conditions than the 80-90 km/h group (17.0%) (x^2=31.215; d.f.=10; p=0.005).

TABLE 52. EXPERIMENTAL GROUP, WEATHER AND ROAD CONDITIONS AND CRASHES

Factor	Experimental Group	Percentage total selection	most	2nd	3rd Important
Wet Weather Car Drivers	80-90 km/h	29.0	5.3	5.9	17.9
	90 km/h	19.6	0.9	3.6	15.3
Road Conditions	80-90 km/h	17.0	2.9	3.8	10.3
	90 km/h	35.7	9.8	8.9	17.0

7.5 SPEEDING, SPEED DISPERSION *AND* TEE POLICE

7.51 Sample Responses

Of most interest to this study, speeding was not perceived to be a factor of substantial contribution to road crashes. It was mentioned by only a moderate number of drivers (84) and accounted for only a very small proportion of all the first, second, third and fourth or less important factors given by the drivers.

Speeding was perceived to contribute to road crashes far less often than car driver behaviour, general driving behaviour and road and weather conditions.

'Slow drivers' were perceived to contribute to road crashes by a moderate number of drivers, but much less than other factors. However, it is interesting to note that the number of drivers who considered differences in travel speed between vehicles travelling on the road to be dangerous to road safety was almost equal to the number of drivers who perceived speeding to be dangerous.

7.52 Experimental Group

Interestingly, similar proportions of drivers from both experimental groups, 20.5% of the 90 kmlh group and 17.9% of the 80-90 kmlh group, perceived speeding to be of importance to road crashes . However, the 90 kmlh group were somewhat more inclined to report speeding to be of foremost or fourth or less important concern. The 80-90 kmlh group predominantly saw speeding as a contributory factor of second or third most importance (x^2=22.439; d.f.=11; p=0.0212).

A higher proportion of 90 kmlh group drivers (24.1%) considered that slow drivers were causes of accidents (80-90 kmlh group = 16.1%). Moreover, while the perceived importance of this factor was well spread for the 80-90 kmlh group it was more often seen to be of foremost or third most concern to the 90 kmlh group (x^2=19.185; d.f=7; p=0.0076).

TABLE 53. EXPERIMENTAL GROUP, SPEED AND CRASHES

Factor	Experimental Group	Percentage total selection	most	2nd Important	3rd
Speeding	80-90 km/h	17.9	3.2	5.3	9.5
	90 km/h	20.5	5.4	1.8	13.5
Slow Drivers	80-90 km/h	16.1	3.5	4.7	7.9
	90 km/h	24.1	8.9	3.6	11.7

Police

A very rare mention was made of the contribution of the police to crashes.This factor was, however, perceived to be of importance by only 13 drivers (2.9%).

No relationship between attitudes to this factor and experimental group was evident. Although statistically significant,the relationship between distance travelled and attitudes to polices and crashes was not experimentally interesting (Appendix 6).

7.6 OTHER FACTORS

7.61 Sample Responses

Factors perceived to contribute to crashes but not recorded as a coded category on the questionnaire were relatively rarely mentioned. They accounted for only 5.3% of all most important factors given, 4.2% of second most important factors and 2.2% and 4.0% of third and fourth or less important causes of crashes.

The types of factors specified by the drlvers who chose the 'other' category are detailed In the Table 54.

Reports of 'other' factors were not related to experimental group or annual distance travelled.

TABLE 54 "OTHER CAUSES OF CRASHES"

"Other"	Number of Respondents
ETA deadlines	17
Other drivers	16
Roadwords in progress	12
Caravans	14
Vehicle maintenance	9
Not enough warning signs	4
Load stability	3
Double to single lane	3
Taking pills/drugs	2
Fog	1
Adverse attitude to truck drivers	1

SECTION 8 - MULTIPLE REGRESSION - PREDICTORS OF PREFERRED SPEED LIMIT.

An "all possible subsets" regressions routine was used to relate a recoded version of Question E3 - What do you think the general truck speed limit should be? - to the following independent (or X) variables:

B4 No years as truck driver?
B11 Age?
B16 Yearly kms driven?
B18 Full time/part time driver?
B21 Who owns the truck?
C 5 Daytime speed on this route?
C 6 Nighttime speed on this route? and:
Dummy variables to distinguish between routes.

Question E3 was recoded to put the first option - NO LIMIT - after the 120 km/h option so as to form a logical numeric sequence.

When only three routes were distinguished, Gundagai, Horsham and Queensland, the best equations contained terms in day and night time speeds with a different intercept *for* each route. Taking the logarithms of the speed limit coding improved the fit of the equations with the following being judged best:

GUNDAGAI
Log (SPDLT) = 0.347 = 0.011 NT SPEED + 0.016 DT SPEED.

HORSHAM
Log (SPDLT) = 0.347 = 0.011 NT SPEED + 0.016 DT SPEED.

QUEENSLAND
Log (SPDLT) = 0.415 + 0.011 NT SPEED + 0.016 DT SPEED.

Drivers claiming to travel at 100 km/h (say) in both day and night would score 4 in Questions C5 and C6, giving expected speed limit preferences of antilog 0.483, 0.495 and 0.523 or 3.04, 3.13 and 3.33 in coded variables *for* the Gundagai, Horsham and Queensland drivers respectively.

In the recoded variables of Question E3, Category 3 corresponds to 100 kmlh and it is suggested that the decimal values for the expected values should correspond to significantly higher speed preferences in Queensland and Horsham than for Gundagai.It should also be noted that the other variables, driver's age, experience and truck ownership etc. did not influence this preference.

Splitting the Queensland routes into their components further improved the fit of the equations with speed limit preferences on the Brisbane route being significantly higher than on the Gympie route.

To overcome the conceptual difficulties associated with predicting fractional values for a coded response, the data was again analysed, but using a logistic model building technique. This requires the responses to Question E3 to be separated into two categories, those above or below a certain value. Two cut points were considered, 90 kmlh and 100 km/h. Very few (8 in 430) thought the speed limit should be 90 km/h or less and this was considered too few for the analysis. The dominant view, expressed by 363 in 430, that 100km/h. or less was appropriate was therefore adopted.

Those drivers coded 2 or 3 for question E3 were therefore coded 0 and those above 100 kmlh were coded 1. The logistic technique predicts the probability of obtaining a less than or equal to 100 kmlh response from a driver in terms of the independent or X variables. The routes and speed of travel during the day were again shown to be highly significant, but night speed failed to enter these equations. The probabilities can be calculated by defining a set of variables from the original print-out which is presented in Appendix 7.

We define E for each route, such that:

GUNDAGAI $E = e(8.21 - 1.32\ DT\ SPEED)$

HORSHAM $E = e(8.26 - 1.32\ DT\ SPEED)$

GYMPIE $E = e(7.28 - 1.32\ DT\ SPEED)$

BRISBANE $E = e(5.55 - 1.32\ DT\ SPEED)$

The probability of obtaining a response less than or equal to 100 kms is then given by:

$$P\ (\leq 100) = \frac{E}{1+E}$$

Drivers nominating a 96 - 100 kmfh day time speed in Question C5 (Code = 4) then have the following probabilities of nominating a speed limit of 100 km/h or less.

GUNDAGAI	0.949
HORSHAM	0.947
GYMPIE	0.881
BRISBANE	0.567

The complements give a measure of dissatisfaction with a 100 km/h speed limit and suggest this would still be significant in Queensland, but negligible in Victoria and NSW.

Presumably, with only 8 in 430 respondents preferring a 90 km/h speed limit, dissatisfaction with this is almost universal.

SUMMARY :

1. For both the 3 route and 4 route regression model experience, age, distance travelled, ownership, and being a full or part time driver did not significantly contribute to the variance of the predictor variable, preferred speed limit.

2. The best predictors for the 3 route regression model were routes, daytime speed of travel and night time speed of travel.

3. A better "fit" was obtained using the logistic regression modelling technique. The best predictors of preferred speed limit were daytime speed of travel and the 4 survey routes.

3. In accordance with the evidence of Section 3 preferred speed limit is not predicted by experimental group, that is current or recently changed speed limit. It is predicted by current speed of travel on a given route. Drivers who drive faster on a given route want a higher speed limit.

4. There is no evidence in this study that current speed or preferred speed limit is substantially influenced by the current speed limit.

III STUDY OF OPERATORS

SECTION 1 METHODOLOGY

In addition to surveying the attitudes of truck drivers to increased speed limits the attitudes of operators to scheduling and time-distance expectations was also surveyed.

1.1 SAMPLE FRAME

The survey of operators was conducted on operators based in NSW, Victoria and Queensland. The operators from NSW and Victoria comprised the 80-90 km/h experimental groups where the speed limit had increased to 90 km/h on January 1st 1987. The speed limit of the Queensland (90km/h) experimental group had remained at 90 km/h. Equal numbers were sampled from each State providing 60 completed interviews for the 80-90 km/h States compared to 30 for the 90 km/h State.

The following possible avenues were considered as to their availability as an appropriate sampling framework for the random selection of truck operators:

(a) Telephone books
(b) Truck registration records
(c) Associations, e.g. Long Distance Road Transport Association
(d) Identification of truck operators at roadside restaurants during survey of drivers.

Truck operators can either be those predominantly engaged in trucking operations or ancillaries, where the predominant activity is in an area such as wholesaling or retailing. The telephone book, method (a), can be used to identify the first sector; however, ancillaries are not easy to identify except by methods (b) and (d).

The most feasible method and the method used for the study was selection from telephone books only. There are a number of categories which can be used for selection purposes, such as the following:

(a) Heavy carriers
(b) Light carriers

(c) Transport services
(d) Refrigerated transport services
(e) Livestock carriers
(f) Carriers - car transportation
(g) Furniture removals and storage

All these categories include a large proportion of predominantly metropolitan operators. Also, there is a fair degree of duplication of entries among the categories. As owner operators are covered in the survey of truck drivers only larger companies need to be surveyed in the survey of operators. After discussions with the Federal office of Road Safety it was decided to randomly select from the Heavy Carriers (bold type entries) category as this appeared to have the major proportion of larger interstate truck operators.

1.2 SURVEY PROCEDURE

The method used to approach the selected truck operators was to initially send a letter to the General Manager/Manager.

The General Manager/Manager was then contacted by telephone to obtain his agreement to cooperate in the survey and to provide an appropriate person within the company to answer the survey questions. That person was contacted at a suitable time to complete the questionnaire over the telephone.

The questionnaire took no longer than five minutes to administer by telephone. Most truck operators contacted were very cooperative and willing to provide their opinions and complete the questionnaire. Response rates greater than 80% were achieved.

1.3 QUESTIONNAIRE AND PILOT STUDY

The questionnaire items were developed in close liaison with representatives of the Federal Office of Road Safety. The questionnaire methodology employed scaling techniques where appropriate with questions designed to minimise response bias and maximise interpretability of data.

The operators' questionnaire also used a "route-based" approach to ensure that the responses obtained were relevant to the two experimental conditions. As speed limits were increased on 1 January 1987 from 80 to 90 km/h in Vic, NSW and SA. questions on opinions about changes in speed limits and truck drivers were only asked of the operators from the 80-90km/h group and for travel only in these states. However for the Queensland operators, where the speed limit remained at 90km/h, the questions asked referred only to travel along routes in Queensland. This resulted in two different questionnaires each containing comparable but appropriately worded questionnaire items. Copies of the questionnaires are included in the appendices.

The questionnaire and survey methodology was piloted on 20 potential respondents (10 Sydney 10 Melbourne) with completed questionnaires obtained from 13 truck operators. The pilot questionnaire was revised for the main study to include extra questions on type of freight carried, flexible or strict schedules, type of truck operation and attitudes towards truck speeds the same as cars. The other questionnaire items were revised and modified to ensure their reliability and salience.

SECTION 2 CHARACTERISTICS OF THE SAMPLE

For the overall sample in the main study 67% owned up to 20 trucks and employed up to 20 drivers. None of the operators sampled owned over 300 trucks.

In response to the question on subcontractors it was found that 22% of operators did not employ subcontractors while 54% employed up to 20 subcontractors.

There was a variety of freight carried by the sampled operators, with 49% of the sample carrying general freight.

For the question on which States/Territories the company operated in it was found that 36% of companies only operated intrastate, while 16% operated in 7 or more States/Territories.

Of the persons completing the questionnaire within the company 26% held the position of Transport/Operations Manager. However 70% of the respondents were directly responsible for the setting of travel schedules. Also 81% of respondents had been truck drivers and 61% had been interstate truck drivers.

TABLE 1. NUMBER OF TRUCKS IN OPERATION

QA1 How many trucks does your company have?

	Number of Trucks						
Group	Nil	1-10	11-20	21-50	51-200	> 200	Total
80-90km/h.							
No	1	24	15	9	7	4	60
%	1.7	40.0	25.0	15.0	11.7	6.7	100.0
90km/h							
No	0	15	6	5	3	1	30
%	0.0	50.0	20.0	16.7	10.0	3.3	100.0

TABLE 2. NUMBER OF DRIVERS EMPLOYED

QA2 How many drivers do you employ?

	Number Drivers.						
Group	Nil	1-10	11-20	21-50	51-200	> 200	Total
80-90km/h.							
No	2	26	12	12	7	1	60
%	3.3	43.3	20.0	20.0	11.7	1.7	100.0
90km/h							
No	0	18	3	6	2	1	30
%	0.0	60.0	10.0	20.0	6.7	3.3	100.0

TABLE 3. NUMBER OF SUBCONTRACTED DRIVERS/COMPANIES

QA3 How many drivers/companies do you subcontract to?

	Number Sub-contractors.						
Group	Nil	1-10	11-20	21-50	51-200	> 200	Total
80-90km/h.							
NO	8	29	8	7	6	2	60
%	13.3	48.3	13.3	11.7	10.0	3.3	100.0
90km/h							
No	12	10	2	5	0	1	30
%	40.0	33.3	6.7	16.7	0.0	3.3	100.0

TABLE 4. TYPE OF FREIGHT CARRIED.

QA4 What sort of freight is carried by your trucks?

Freight	80-90KM/H		90KM/H	
	NO	%	No	%
General	32	59.3	12	40.0
Hazardous/liquids chemicals/petrol	4	7.4	0	0.0
Non hazardous liquids	4	7.4	1	3.3
Refrig-general fruit produce, eggs etc.	3	5.6	2	6.7
Glass, building materials, plastics	1	1.8	2	6.7
Machinery, heavy earth moving haulage	4	7.4	4	13.3
Mixed specifics	2	3.1	5	16.7
Waste paper	1	1.8	0	0.0
Containers	2	3.7	1	3.3
Furniture	1	1.9	0	0.0
Express	0	0.0	1	3.3
Cotton	0	0.0	1	3.3
Livestock	0	0.0	1	3.3
All	54	100.0	30	100.0
Missing	6	-	0	-

TABLE 5. STATES OF OPERATION.

QA5 What states does your company operate in?

	NSW	VIC	QLD	SA	WA	TAS	ACT	NT
NSW	30	16	11	8	3	1	4	3
VIC	23	30	15	17	11	1	8	7
QLD	15	12	30	12	7	3	6	7

TABLE 6. NUMBER OF STATES OF OPERATION.

No of states that company operates in

	1	2	3	4	5	6	7	8	TOTAL
NSW									
No	14	1	8	4	1	0	1	1	30
%	46.7	3.3	26.7	13.3	3.3	0.0	3.3	3.3	100.0
VIC									
No	4	4	10	3	2	1	6	0	30
%	13.3	13.3	33.3	10.0	6.7	3.3	20.0	0.0	100.0
QLD									
No	14	4	0	5	1	0	3	3	30
%	46.7	13.3	0.0	16.7	3.3	0.0	10.0	10.0	100.0

The answers to the question of the number of states that the companies operated in did not correlate with those for the previous question, "What states does your company operate in" in terms of the number of companies only operating intrastate. The previous question which specifically asks whether they operate in a particular state is considered more reliable. It is also worth noting that fewer companies in Victoria only operated

intrastate within that State. This may reflect smaller size or factors related to economy or type of industry in Victoria.

TABLE 7. INTRASTATE AND/OR INTERSTATE OPERATIONS.

QA6 Do your drivers travel interstate, intrastate or both?

Group	Interstate	Intrastate	Both	Total	
80-90km/h					
No.	19	13	27	59	n_1=59
%	32.2	22.0	45.8	100.0	
90km/h					
No.	2	16	12	30	n_2=30
%	6.7	53.3	40.0	100.0	

TABLE 8. POSITION OF RESPONDENT.

QAI What is your position in the company?

	GROUP			
	80-90km/h		90km/h	
	No	%	No	%
Transport/Operations Manager	11	18.3	12	40.0
Manager/Assistant Manager	36	60.0	6	20.0
Supervisor	2	3.3	1	3.3
Director/ Managing Director	4	6.7	5	16.7
Owner/Owner Manager/Proprietor	2	3.3	2	6.1
Secretary/Clerk	4	6.7	1	3.3
Driver	1	1.7	1	3.3
Despatch/Foreman	0	-	2	6.1
Total	60	100.0	30	100.0

TABLE 9. RESPONSIBILITY OF RESPONDENT FOR SCHEDULES

n=86

QA8 Responsibility for setting of schedules

	80-90km/h		90km/h	
	No	%	No	%
Directly responsible for the setting of travel schedules.	39	69.6	21	70.0
Involved in setting of travel schedules	2	3.6	1	3.3
Manager or other position with direct knowledge of the schedules set.	15	26.8	8	26.7
Total	56	100.0	30	100.0

***TABLE* 10. RESPONDENT'S EXPERIENCE AT TRUCK DRIVING**

QC1 Iiave you ever been a truck driver?

Group	Yes	NO	Tota]
80-90km/h			
No	49	11	60
%	81.7	18.3	100.0
90km/h			
No	24	6	30
%	80.0	20.0	100.0

TABLE 11. RESPONDENT'S INTERSTATE TRUCK DRIVING EXPERIENCE.

QC2 Did you drive interstate?

Group	Yes	NO	Total	
80-90km/h				
No	27	25	52	n_1=52
%	51.9	48.1	100.0	
90km/h				
NO	20	5	25	n_2=25
%	80.0	20.0	100.0	

Overall there appears to be a fair degree of similarity between the characteristics of the sample for the 80-90km/h and 90km/h groups in terms of the types of trucking operators and the respondent type. However as mentioned previously the Victorian sample included far fewer operators who only travelled intrastate than the other two sampled states.

SECTION 3 OPINIONS OF OPERATORS

3.1 SCHEDULES, TRAVEL TIMES AND SPEED LIMITS

TABLE 12. TIME ALLOWED FOR DRIVERS TO REACH DESTINATIONS

QB6 My drivers have more than enough time to reach their destination and they can organise their departure time and breaks accordingly.

	Strongly Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90km/h						
No	18	28	3	6	3	58
%	31.0	48.3	5.2	10.3	5.2	100.0 n_1=58
90km/h						
No	15	11	0	0	0	26
%	51.1	42.3	-	-	-	100.0 n_2=26

This question was included in the main survey after most operators in the pilot survey indicated that they set flexible schedules which obviously were not affected by changes in speed limits.

The majority of operators (86%) believe that their drivers have more than enough time to reach their destination. It would seem that most operators do not set strict schedules and that there is no real pressure from operators on drivers to reach destinations under strict time schedules.

This response is reflected in the operators' opinions on whether their drivers get to their destinations more quickly now than they did last year. A relatively small and comparatively equivalent percentage of operators from

both experimental groups agreed that their drivers now arrived at their destinations quicker. *For* the 80-90km/h states where the speed limit was increased at the beginning of 1987 only 15% of operators agreed. *For* the 90km/h state where the speed limit was not increased only 19% agreed.

This result suggests firstly that a change in the time taken for drivers to reach their destinations has not been observed by the majority of operators, regardless of recent or no changes in the speed limit. Secondly, and most importantly, where changes have been reported there is no evidence that it has been observed more or less often by operators in either experimental group. Thus, factors other than the speed limit may have influenced the operators' opinions, such as improved roads.

Operators' opinions on whether they now expect truck drivers to get to their destinations quicker but have not set schedules according to that expectation showed that 13% agreed for the 80-90 kmfh states whereas 21% agreed for the 90 kmlh state. As regards revising their schedules both the 80-90 kmlh and 90 kmlh groups show low agreement of 5% and 8% respectively, with the statement that they have altered their schedules since last year. This evidence does not support an idea that operators may respond to recently increased speed limits by tightening travel schedules, and suggest again that factors other than speed limits are influencing the operators' behaviour.

In response to whether the operators would raise their schedules if the speed limit was increased to 100 km/h overall,24% agreed that they would revise their schedules,with 38% agreeing that they would expect drivers to arrive at destinations quicker. Similar opinions were obtained from operators in 80-90 km/h and 90 kmfh groups.

It is interesting to note that, although the majority of operators did not indicate that they would tighten their schedules with a speed limit of 100 kmlh, a somewhat higher proportion were likely to consider this at 100 kmlh than at 90 kmlh.

The operators' responses to these questions are in accord with the responses of drivers. The response of the majority of drivers in this survey to the question of whether they have changed their travel speed along a particular route compared to last year and whether they must travel faster to meet their schedules was that they were now neither slower or faster (65% of responses from 80-90 km/h group, 84%, 90 km/h group).

The following conclusions can be drawn:

1. In accordance with the drivers' survey this survey indicated that there is no real evidence that increased speed limits substantially influence travel speed. There are obviously other factors such as convoys, speed dispersion, road conditions that affect the speed at which trucks travel.

2. The speed at which trucks travel is more driver related than operator related. If anyone is going to make decisions to speed it will be the drivers.

TABLE 13. CURRENT SPEED OF REACHING DESTINATION COMPARED TO PRE-SPEED LIMIT INCREASE.

QB1 The trucks in your company any get to their destination more quickly now than they did:
- before the speed limit was increased to 90 km/h (90 km/h)- last year (80-90 km/h)

	Strongly Agree	Mildly Agree	Neither Disagree nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90 km/h No	0	9	14	26	11	60
%	0.0	15.0	23.3	43.3	18.3	100.0 n_1=60
90 km/h No	0	5	8	6	7	26
%	0.0	19.2	30.8	23.1	26.9	100.0 n_2=26

TABLE 14. OPERATORS' CURRENT EXPECTATIONS OF *TRAVEL* TIMES

QB2 I now expect my truck drivers to get to their destinations more quickly but do not set my schedules according to that expectation.

	Strongly Agree	Mildly Agree	Neither Agree Nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90km/h						
No	**1**	7	**9**	33	10	**60**
%	1.7	11.7	15.0	55.0	**16.7**	**100.0**
						n_1=60
90km/h						
No	**0**	7	**1**	6	12	26
%	**0.0**	**26.9**	**3.9**	**23.1**	**46.1**	**100.0**
						n_2=26

TABLE 15. REVISION OF SCHEDULES SINCE LAST YEAR/SPEED LIMIT CHANGE.

QB3 I have revised my schedules due to the increased speed limit (80-90km/h). I have decreased the scheduled time allowed for my trucks to reach their destinations since last year (90km/h).

	Strongly Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90km/h						
No	0	3	**5**	18	34	60
%	0.0	5.0	8.3	30.0	56.7	100.0
						n_1=60
90km/h						
NO	**0**	**2**	**2**	**11**	**11**	26
%	0.0	7.7	7.7	**42.3**	42.3	**100.0**
						n_2=26

TABLE 16. 100 KM/H AND POSSIBILITY OF SCHEDULE REVISION

QB4 If the speed limit was increased to 100km/h I would revise my schedules.

	Strongly Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90km/h						
NO	1	13	5	23	18	60
%	1.7	21.7	8.3	38.3	30.0	100.0
90km/h						
No	1	6	7	7	5	26
%	2.3	22.1	14.0	34.9	26.7	100.0

TABLE 17. 100 KM/H AND OPERATORS.

QB5 If the speed limit was increased to 100km/h I would expect the drivers to arrive at their destinations more quickly than they do now.

	Strongly Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Strongly Disagree	Total
Group						
80-90km/h						
No	2	21	9	17	11	60
%	3.3	35.0	15.0	28.3	18.3	100.0 n=60
90km/h						
No	4	6	6	2	8	26
%	15.4	23.1	23.1	7.7	30.8	100.0 n=24

3.2 PREFERRED SPEED LIMITS

Operators were asked a series of questions on what truck speed limits they would like.

TABLE 18. PREFERRED SPEED LIMIT ON FREEWAYS.

QD1.1 What would you like the general truck speed limit to be on Freeways?

Group	Speed limit. 90km/h	100km/h	110km/h	120km/h	Total
80-90km/h					
No	6	36	17	1	60
%	10.0	60.0	28.3	1.7	100.0 n_1=60
90km/h					
No	4	20	2	1	27
%	14.8	74.1	7.4	3.7	100.0 n_2=27

TABLE 19. PREFERRED SPEED LIMIT ON HIGHWAYS.

QD1.2 What would you like the general truck speed limit to be on Major Highways/open roads.

Group	90km/h	100km/h	110km/h	120km/h	120km/h	Total
80-90km/h						
No	9	45	5	1	0	60
%	15.0	75.0	8.3	1.7	-	100.0
90km/h						
No	4	24	1	0	0	29
%	13.8	82.8	3.4	0.0	0.0	100.0

TABLE 20. PREFERRED SPEED *LIMITS.*

QD2 **I would be happy with truck speed limits the same as car speed limits.**

Group	Strongly Agree	Mildly Agree	Neither Agree nor Disagree	Mildly Disagree	Strongly Disagree	Total
80-90km/h						
No	30	21	0	7	2	60
%	50.0	35.0	0.0	11.7	3.3	100.0
90km/h						
No	18	8	2	1	1	30
%	60.0	26.7	*6.1*	3.3	3.3	100.0

64% of operators would like to see 100km/h and 22% 110km/h on freeways. *For* other major highways/open roads 78% of operators would like to see a 100km/h truck speed limit.

This view of increasing the truck speed limit to at least 100km/h was reinforced by the response of operators to whether they would be happy with truck speed limits the same as cars, with overall 86% agreeing with the statement. In fact, all operators from the 90km/h state Queensland agreed with the statement.

This response was, again, in accord with the drivers' responses.

3.3 SUMMARY

The survey of long distance heavy truck operators based in NSW and Vic (80-90km/h) and Qld (90km/h) resulted in operator's opinions that showed that there is no evidence for changes in speed limits affecting travel schedules.

The majority of operators sampled had up to 20 trucks and drivers and used up to 20 sub contractors. They were mainly interstate truck operators with about half carrying general freight.

Most of the persons completing the questionnaire had been interstate truck drivers and were directly responsible for setting travel schedules.

Overall there was little difference in the characteristics of the samples from the 80-90km/h and 90km/h groups except that the Victorian sample had very few operators who only travelled intrastate.

There was little difference in the opinions of the 80-90 km/h and 90 km/h groups. Operators in general do not set strict schedules. Compared to last year the majority of operators have not revised their schedules nor expect their drivers to get to their destinations quicker.

If the speed limit was increased to 100 km/h the majority of operators still would not revise their schedules or expect their drivers to get to their destinations quicker. However a greater proportion of operators would revise their schedules if the speed limit was increased to 100 km/h than if it was only increased to 90 km/h.

As for what truck speed limits operators would like, most would be happy with a speed limit the same as cars, or a general truck speed limit of 100km/h.

IV CONCLUSION.

The success of this study was evident in the assessment of the reliability of the sample and the response rate.

The reasonable standard error of responses and the extraordinarily high response rate suggest that these results can be viewed with considerable confidence.

The following conclusions can be drawn form the results

1. Truck drivers prefer to travel and operators perceive their drivers as travelling at 100km/h even though the current speed limit is 90km/h.

2. Truck drivers and operators would prefer a truck speed limit of 100km/h.

3. Speed limit per se was not considered to be an important consideration when deciding speed of travel. However, detection of exceeding it was one of the most important considerations.

4. The majority of drivers had not increased their speed of travel since last year, regardless of the current speed limit or recent changes to it. Operators agreed with this and that the drivers did not now have to travel any faster to keep their schedules.

5. Speed was not considered to be a predominant cause of road crashes

6. Where significant differences between experimental groups were observed for preferred speed limit, and for the small number of drivers who felt that their speed had increased since last year, a significant difference was also observed between drivers on different routes. Multiple regression analysis also showed that preferred speed limit was not predicted by experimental group but by current speed of travel on a given route.

I. This study did not provide evidence that current speed or preferred speed limit is substantially influenced by the current speed limit. The evidence suggested that factors associated with given routes of travel are more important.

8.Drivers were opposed to different speed limits. Indeed the opinion that this was a major road hazard was indicated throughout the study.

9. Truck drivers support travel in convoys and consider it safer when when there are no speed differences between theirs and other vehicles. It seems they will continue with this behaviour regardless of the speed limit and that, therefore, strategies other than consideration of the speed limit may prove more effective in dealing with it.

10. This study did not reveal any safety disbenefits resulting directly from the recent increase in speed limit for the Victorian and NSW drivers. Indeed drivers were more likely to point to the safety hazard of speed dispersion and to suggest that they currently travel at 100 km/h.

REFERENCES

Linklater, D.R., A Profile of Long Distance Truck Drivers, Traffic Accident Research Unit, Department of Motor Transport N.S.W., December, 1977.

Road Transport Industry Council, N.S.W., Report on an Operations and Commissions Study of Long Distance Owner Drivers in N.S.W., by W.D. Scott Pty. Ltd., June, 1984.

APPENDIX 1

QUESTIONNAIRE FOR TEE SURVEY OF TRUCK DRIVERS

APPENDIX 1: QUESTIONNAIRE FOR THE SURVEY OF TRUCK DRIVERS

ID NUMBER

Day

Mon	1
Tues	2
Wed	3
Thurs	4
Fri	5
Sat	6
Sun	7

[CIRCLE ONE]

Date | | | | |

Day Month

Interview commencement time:

---------- am/pm

Interview completion time:

---------- am/pm.

SURVEY OF TRUCK DRIVERS.

Strictly confidential.

SECTION (A)

I am going to read to you some statements about truck driving and I would like to know how much you agree with them. Tell me whether you strongly agree, mildly agree, neither agree nor disagree, mildly disagree or strongly disagree with them by choosing one number from one to six from this code:

(SHOW CARD A)

Strongly agree	1
Mildly agree	2
Neither agree nor disagree	3
Mildly disagree	4
Strongly disagree	5

Here is the first statement..

(1) Having different speed limits for cars and trucks is dangerous .....

Do you strongly agree, mildly agree, neither agree nor disagree, mildly disagree, strongly disagree with this?

(SHOW CARD *A*).

1 2 3 4 5

[CIRCLE RESPONDENTS ONE CHOICE1

(2) Trucks should not be allowed to travel In convoys of three or more trucks

1 2 3 4 5

(3) A slower speed limit for trucks is often dangerous because, on one-lane highways, other motorists have to pass them.

1 2 3 4 5

(4) Travelling in convoys would be safe if the speed limits for cars and trucks were the same.

1 2 3 4 5

(5) When you decide what speed you will travel at on this route you always take into account the speed that you think other truck drivers travel.

1 2 3 4 5

SECTION (B) BIOGRAPHIC VARIABLES

We would like to how some things about yourself and your truck:

(1) Are you driving a semitrailer on this leg?

YES----------1

NO----------2

[CIRCLE ONE NUMBER]

(2) (IF "NO") What sort of truck are you driving today?

VAN----------1

LORRY----------2

UTILITY----------3

PRIME MOVER----------4

OTHER----------5
[PLEASE SPECIFY]

(3) Is the truck .....

ARTICULATED----------1

RIGID WITHOUT TRAILER----------2

RIGID WITH A TRAILER----------3

[SELECT ONE MOST APPROPRIATE]

(4) How many years have you been driving a ..... ?
[INSERT TYPE OF TRUCK DRIVER IS CURRENTLY DRIVING PROM QUESTION 2 and 31

YEARS

0 - 4.9	1
5 - 9.9	2
10 - 14.9	3
15 - 19.9	4
20 - 24.9	5
25 - 29.9	6
30 - 34.9	7
35 - 39.9	8
40 and over	9

(5) What is the tare unladen weight of your truck?

TONNE

0 - 10	1
11 - 20	2
21 - 30	3
31 - 40	4
41 - 50	5
51 - 60	6
over 60	7

[CIRCLE ONE]

(6) What is its carrying capacity?

TONNE

0 - 10	1
11 - 20	2
21 - 30	3
31 - 40	4
41 - 50	5
51 - 60	6
over 60	7

(7) What state was the truck you're driving now registered in?

N.S.W.-------1
VIC ---------2
S A----------3
W.A----------4
N.T ---------5
QUEENSLAND---6

(8) Does it have interstate registration or intrastate registration?

INTERSTATE---1
INTRASTATE---2

(9) How long have you been driving any type of vehicle? (ON ROAD DRIVING ONLY)

0 - 4.9 _____ 1
5 - 9.9 _____ 2
10 - 14.9 _____ 3
15 - 19.9 _____ 4
20 - 24.9 _____ 5
25 - 29.9 _____ 6
30 - 34.9 _____ 7
35 - 39.9 _____ 8
40 and over _____ 9

(10) What class of truck licence do you hold?

CIRCLE ONE NUMBER

Classification:

Vic	N.S.W.	S.A.	QLD.	1987 NATIONWIDE	
H	3/3a	2	C	Light/Heavy truck	1
A or T	5	3	E	Light/Heavy Articulated	2
Road Train	5b	Road Train	Road Train	Road Train	3

[REFER TO INTERVIEWER'S INSTRUCTIONS

(11) How old are you?

18 - 25 years--------1
26 - 30 --------2
31 - 40 --------3
41 - 50 --------4
51 and over ---------5
[ROUND OFF TO NEAREST WHOLE YEAR]

(12) Where did you start from on this leg of your trip?

TOWN/CITY_____
[SPECIFY]

STATE_____
[SPECIFY]

(13) Where are you going to on this leg of your trip?

TOWN/CITY_____

STATE_____

[IS DRIVER TRAVELLING INTERSTATE? Yes_____1

NO_____21

(14) Approximately how many miles/kilometres have you driven in the last week in a truck?

KILOMETRES	(MILES)	
none	(none)	1
1 - 1999	(1 - 1199)	2
2000 - 3999	(1200 - 2399)	3
4000 - 5999	(2400 - 3599)	4
6000 - 7999	(3600 - 4799)	5
8000 - 9999	(4800 - 5999)	6
10000 - 11999	(6000 - 7199)	7
12000 and over.	(8000 and over)	8

[CIRCLE ONE NUMBER]

(15) How many legs have you travelled in the past week?

[A ROUND TRIP = TWO LEGS]

NO. LEGS	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8 and over	8

(16) What would be the average number of miles/kilometers that you drive in a truck in a year?

KILOMETRES	(MILES)	
1 - 99000	(1 - 59999)	1
100000 - 199000	(60000 - 119999)	2
200000 - 299000	(120000 - 179999)	3
300000 - 399000	(180000 - 239990)	4
400000 - 499000	(240000 - 299999)	5
500000 - 599000	(300000 - 359999)	6
600000 - 699000	(360000 - 419999)	7
700000 - 799000	(420000 - 479999)	8
800000 and over.	(500000 and over)	9

(17) How many legs would you have driven along this route in the last two weeks?

NO. LEGS	
none	1
1 - 2	2
3 - 5	3
6 - 8	4
9 - 11	5
12 and over	6

(19) **Do you have another full-time or part-time job as well?**

Full-Time Job ----------1

Part-Time Job ----------2

No Other Job ----------3

(20) **How heavy is your load on this trip? (INDICATE IF UNLOADED)**

TONNE	
0 - 10	----------1
11 - 15	----------2
16 - 20	----------3
21 - 25	----------4
26 - 30	----------5
over 30	----------6
unloaded	----------7

(21) Who owns the truck you are driving?

owner-driver ----------1

transport company owned (employee driver) ----------2
[ENQUIRE AND RECORD COMPANY NAME]

[IF OWNER-DRIVER ASK QUESTIONS (22 and 23)]

IF OWNER DRIVER .....

(22) Is your truck .....

owned singly by you?----------1
owned by a partnership or group?---2
being paid off by you singly?------3
being paid off by the
partnership/group?----------4

(23) How long have you been driving your own truck?

YEARS
less than one year ----------1
1 - 1.9 ----------2
2 - 4.9 ----------3
5 - 9.9 ----------4
10 - 14.9----------5
15 - 19.9----------6
20 years and over.----------7

SECTION (C)

We would like to know about the things that effect the speed that you travel at during the day and during the night.

DAYTIME TRAVEL.

(1) When your are driving along this route during the day time what is the most important thing that decides what speed you will travel at?

[DO NOT PROMPT OR SUGGEST ANSWERS. ALLOW RESPONDENT TO GIVE HIS OWN RESPONSE]

[SELECT RESPONDENT'S FIRST SINGLE CHOICE FROM THE LIST BELOW AND PLACE A ONE (1) IN THE CORRESPONDING BOX]

(2) What other things do you also think about when you decide what speed you will travel at during the day?

[ENCOURAGE RESPONDENT TO LIST AS MANY CAUSES AS HE FEELS ARE WORTH MENTIONING - DO NOT PROMPT OR SHOW THE CODES LISTED ON PAGE 12.
SELECT EACH OF THE RESPONDENT'S CHOICES FROM THE LIST ON PAGE 12 AND NUMBER EACH ONE IN THE ORDER IN WHICH HE LISTS IT BEGINNING WITH THE NUMBER TWO (2). AN EXAMPLE HAS BEEN INCLUDED IN THE INSTRUCTIONS TO INTERVIEWERS]

CODE IS ON PAGE 13.

CODE

[NUMBER EACH CHOICE CONSECUTIVELY]

GENERAL CONDITIONS---------- ☐
[SPECIFY FURTHER]

SAFETY---------- ☐

WHAT SUITS THE TRUCK - eg. truck tyres

truck motor

driving smoothly-- ☐

ALERTNESS/PHYSICAL WELL-BEING OF DRIVER----- ☐

WEATHER (wet or dry)---------- ☐

HEAT/TEMPERATURE - (effect on truck motor)--- ☐

DENSITY OF TRAFFIC/NO. OF CARS ON ROAD etc-- ☐

RADAR/POLICE---------- ☐

RUNNING LATE/TIME SCHEDULE FOR DELIVERY----- ☐

ECONOMY---------- ☐

LOAD - WEIGHT CARRYING---------- ☐

ROAD CONDITIONS (specify further)---------- ☐

OTHER (specify) ---------- ☐

DON'T TRAVEL DURING

DAY ---------- ☐

NIGHT-TIME TRAVEL.

(3) When your are driving along this route during the night time what Is the most important thing that decides what speed you wlll travel at?

[DO NOT PROMPT OR SUGGEST ANSWERS. ALLOW RESPONDENT TO GIVE HIS **OWN** RESPONSE1

[SELECT RESPONDENT'S FIRST SINGLE CHOICE FROM THE LIST ON PAGE 14 AND PLACE A ONE (1) IN THE CORRESPONDING BOX)

(4) What other things do you also think about when you decide what speed you will travel at during the night?

[ENCOURAGE RESPONDENT TO LIST AS MANY THINGS AS HE FEELS ARE WORTH MENTIONING - DO NOT PROMPT OR SHOW THE CODES LISTED ON PAGE 14.
SELECT EACH OF THE RESPONDENT'S CHOICES FROM THE LIST ON PAGE 14 AND NUMBER EACH ONE IN THE ORDER IN WHICH HE LISTS IT BEGINNING WITH THE NUMBER TWO (2)]. An **example has been included in the instructions to interviewers1**

CODE IS ON PAGE 15.

15

CODE

[NUMBER EACH CHOICE CONSECUTIVELY1

GENERAL CONDITIONS---------- ☐
[SPECIFY FURTHER]

SAFETY---------- ☐

WHAT SUITS THE TRUCK - eg. truck tyres

truck motor

driving smoothly-- ☐

ALERTNESS/PHYSICAL WELL-BEING OF DRIVER----- ☐

WEATHER (wet or dry)---------- ☐

HEAT/TEMPERATURE - (effect on truck motor)-- ☐

DENSITY OF TRAFFIC/NO. OF CARS ON ROAD etc-- ☐

RADAR/POLICE---------- ☐

RUNNING LATE/TIME SCHEDULE FOR DELIVERY----- ☐

ECONOMY---------- ☐

LOAD - WEIGHT CARRYING---------- ☐

ROAD CONDITIONS (specify further)---------- ☐

OTHER (specify) ---------- ☐

DON'T TRAVEL AT NIGHT---------- ☐

(5) Under normal driving conditions, what speed do you like to travel at on this route during the day?

KPH

80 - 85	1
86 - 90	2
91 - 95	3
96 - 100	4
101 - 105	5
106 - 110	6
111 - 115	7
116 - 120	8
121 - 130	9
130 and over.	10

[CIRCLE ONE]

(6) Under normal driving conditions, what speed do you like to travel at on this route during the night?

KPH

80 - 85	1
86 - 90	2
91 - 95	3
96 - 100	4
101 - 105	5
106 - 110	6
111 - 115	7
116 - 120	8
121 - 130	9
130 and over.	10

[CIRCLE ONE]

(7) How long will it take you to do this leg of your trip from start to finish?

HOURS

under 10	1
10 - 11	2
12 - 13	3
14 - 15	4
16 - 19	5
20 - 21	6
22 - 23	7
24 - 25	8
26 - 30	9
31 - 33	10
34 - 35	11
36 - 37	12
38 - 44	13
45 - 46	14
47 - 48	15
49 - 50	16
over 50.	17

[CIRCLE ONE]

SECTION (D)

I am going to read out to you a list of situations which might change the speed you travel at along this route. Tell me how you think these situations affect your speed of travel by selecting a number from one to five from this code. (HOLD UP CARD B). If you think you travel a little bit faster in the situation that I describe then select a 4. If you travel quite a bit faster then select a 5. If you would travel more slowly then choose a 1 OR a 2. If there is no difference in your speed choose a 3.

CODE

1	FASTER
2	A LITTLE FASTER
3	NEITHER SMWER NOR FASTER
4	A LITTLE SLOWER
5	SLOWER

(1) Compared to when I am travelling on the road alone, when there are cars travelling in the same direction with me I usually travel..

Slower	A Little Slower	Neither Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

(2) Compared to when I am travelling alone in the daytime, when I am travelling in a convoy of trucks my speed of travel is usually ....

Slower	A Little Slower	Ne1ther Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

(3) When I am travelling with a full load the speed at which I like to travel is .....

Slower	A Little Slower	Neither Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

.....than when I'm carrying a light load.

(4) Compared to when I am travelling alone in the nightime, when I am travelling in a convoy of trucks my speed of travel is usually .....

Slower	A Little Slower	Neither Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

The following statements may describe the way you now drive along this route. Please tell us how well you agree with them by choosing your response from this same code. (SHOW ***CARD*** *B)* **:**

(5) **Compared to last year, I now travel along this route at a speed that is.....**

Slower	A Little Slower	Neither Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

(6) **If I am going to deliver my load within the time expected of me I must now travel at a speed that is.**

Slower	A Little Slower	Neither Slower Nor Faster	A Little Faster	Faster
1	2	3	4	5

.....than the speed that I had to go at to be on time last year.

SECTION (E):GENERAL QUESTIONS

(1) What do you'think is the major cause of accidents Involving trucks?

[DO NOT PROMPT OR SUGGEST ANSWERS1

[SELECT RESPONDENT'S FIRST SINGLE CHOICE FROM THE LIST ON PAGE 21 AND PLACE A ONE (1) IN THE CORRESPONDING BOX]

(2) What other things are often the causes of accidents involving trucks?

[ENCOURAGE RESPONDENT TO LIST AS MANY CAUSES AS HE FEELS ARE WORTH MENTIONING. DO NOT PROMPT OR SHOW CODES. NUMBER EACH CAUSE LISTED BY RESPONDENT IN THE ORDER IN WHICH HE FIRST LISTS THEM BEGINNING WITH THE NUMBER TWO (2)
An example has been included in the instructions to lnterviewersl

CODE IS ON PAGE 22.

CODES

CAR DRIVERS---------- ☐

INEXPERIENCED/UNSKILLED/

IMPATIENT CAR DRIVERS---------- ☐

LACK OF DRIVER EDUCATION/

DRIVER IGNORANCE---------- ☐

SLOW DRIVERS---------- ☐

CARS OVERTAKING/CUTTING IN FRONT------ ☐

CAR DRIVER FATIGUE---------- ☐

TRUCK DRIVER FATIGUE---------- ☐

DRIVER FATIGUE (IN GENERAL)---------- ☐

INEXPERIENCED TRUCK DRIVERS---------- ☐

INEXPERIENCED DRIVERS (IN GENERAL)---- ☐

DRUNK DRIVERS---------- ☐

SPEEDING---------- ☐

WET WEATHER---------- ☐

POLICE---------- ☐

ROAD CONDITIONS (PLEASE SPECIFY)------ ☐

OTHER ----------

[SPECIFY]

---------- ☐

(3) What do you think the general truck speed limit should be?

	KPH
no limit	1
90	2
100	3
110	4
120	5
over120	6

(4) Have you driven a truck along the Eyre highway in the last six months?

Yes----------1

No----------2

[IF YES] Under normal driving conditions what speed did you choose to travel at on this route?

KPH	
80 - 85	1
86 - 90	2
91 - 95	3
96 - 100	4
101 - 105	5
106 - 110	6
111 - 115	7
116 - 120	8
121 - 130	9
130 and over.	10

Are there any further comments that you would like recorded on this questionnaire?

We are particularly interested in anything about truck speed limits that you thought was left out from the questionnaire.

APPENDIX 2

LETTER OF IDENTIFICATION OF INTERVIEWERS FOR TRUCK DRIVER STUDY

APPENDIX 2: LETTER OF IDENTIFICATION OF INTERVIEWERS FOR TRUCK DRIVER STUDY.

Federal Department of Transport

Our Reference 6(b&c)93

Your Reference

Contact

Dear Driver

The Survey in which you are being asked to take part is being undertaken for the Federal Office of Road Safety by Nanette Dykes and Siranath Pty Ltd. Interviews are being conducted by representatives of Nanette Dykes, a firm specialising in survey work of this kind. Your interviewer, whose name appears below, is carrying identification.

The aim of the survey is to get truck driven' views on driving conditions, particularly travel speed. The States and the road transport industry support the objectives of the survey.

The interview will take about 15 minutes of your time. No names ok vehicle registration numbers are being sought, so that driven' answen *will* be in strict confidence. No driver will be able to be identified in the results.

If you have any concerns about on the survey, Mr Ken Smith in the Research Section of the Federal Office of Road Safety is available to discuss these with you. He can be contacted on 062-687391 during business hours.

Thank you for your assistance.

P. Makeham
A/g Director
Federal Office of Road Safety

28 APR 1987

Your interviewer is .....

GPO BOX 594, CANBERRA ACT 2601 TELEPHONE (062) 687111 TELEX 62018 FACSIMILE NO 572615

APPENDIX 3

GUIDELINES FOR INTRODUCTION OF INTERVIEWER TO TRUCK DRIVER

APPENDIX 3: GUIDELINES FOR INTRODUCTION OF INTERVIEWER TO TRUCK DRIVER. 1

INSTRUCTIONS TO INTERVIEWERS - PLEASE READ

USE OF THE QUESTIONNAIRE

SECTION 1: GENERAL INFORMATION

This questionnaire has been carefully developed so that the questions can be easily understood and will directly ask the things we want to know about.

It is, therefore, very important that the whole of each interview with each driver be directly guided by the wording in the questionnaire. Read each question exactly as it is written.

Instructions for the presentation of each question are on the questionnaire. In addition, an instructor will brief you prior to your first interview.

In section 2 below is a guide to using the instructions on the questionnaire.

In Section 3 below is background information and guidance about each question should you require it. If they are read exactly as presented in the questionaire you should

not have to further explain any of the questions. However, please use this information anywhere that you feel that it is useful to explain the questions to the driver or to obtain clearer answers.

The whole intervlew should not take you longer than 15 minutes. The questlonnalre can be completed In 10 minutes.

It is, of course, Important that you show interest and acceptance of the drivers' point of view. As experienced interviewers it is expected that you will not allow your point of view to influence the drivers nor argue or disagree with them. Neutral, encouraging comments and Interest in the drivers point of view is essential.

It is also important that you do not get caught up in long discussions with the drivers. Try to keep them moving through each of the questions. We would prefer to obtain their first as well as their best answers'to each question so moving at a steady pace through the questionnaire is important. Record other Issues on the back page but, again, please don't let this discussion go on.

SECTION 2 INSTRUCTIONS FOR PRESENTATION OF THE QUESTIONNAIRE ITEMS

2.1 How to use the instructions on the questionnaire:

(1) Instructions for presenting each question are included in each section of the questionnaire:

ALL NOTES IN CAPITAL LETTERS AND BRACKETS ARE INSTRUCTIONS TO YOU TEE INTERVIEWER.

DO NOT READ NOTES IN CAPITALS AND BRACKETS OUT TO THE RESPONDENT.

IT IS ESSENTIAL TEAT YOU READ TEESE DIRECTIONS BEFORE YOU START INTERVIEWING AND FOLLOW TEEM EXACTLY WHEN INTERVIEWING.

Read the following examples:

Example 1 : In Section A you are instructed to show the card A to the respondent and to place a circle around the number he chooses.

Example 2 : Proper presentation of Section C, page 12 requires that you have carefully read all the instructions to interviewers in capitals and brackets.

Example 3 : Section B question 3, page 4 says [PLEASE SPECIFY]. Here,and in other places where this occurs it instructs you to select the number for the "other" code and WRITE THE RESPONDENT'S ANSWER in the space provided.

(2) INSTRUCTIONS TO THE DRIVER ARE WRITTEN IN ITALICS .

ALWAYS READ THESE INSTRUCTIONS TO TEE RESPONDENT.

For example: In section A the notes in italics above the boxed area SHOULD BE READ WORD FOR WORD to the. respondents.

After that, the first question should be presented using the accompanying italicized instructions. You should actually say the following to the respondent:

"Here is the first statement. Having different speed limits for cars and trucks is dangerous. Do you strongly agree, mildly agree, neither agree nor disagree, mildly disagree or strongly disagree with this."

Please note: Specific italicized instructions are provided only wlth the first question for each section or set of questions of a similar type. It is expected that the respondent will then not need instructions to answer the next questions.

However, should the respondent require further explanation use the same wording or parts of the wording given in italics to help them. It will be up to you to determine how much of the instructions to give and for how long in this case.

Always use the italicized instructions for the first question. Always continue to use these instructions If their is even the slightest indication that the respondent needs such assistance.

2.2 Further information about some of the question formats.

Section A:

The respondent must choose **ONE NUMBER** as his answer from the code.

Your reference code is on the questionnaire.

The respondents' reference code is on **CARD A** which you will point out to him

Section B:

Question **B4**: If, for example, the driver has indicated in question B1 that he is driving a semitrailer then finish question 4 with "semitrailer".

If the respondent answers "No" (2) to B1 and selects an answer in B2 include the type of truck recorded in B2 In question B4

I

Question B10: Background information:

Up until 1987 each State had its own licence classifications. During 1987 all states will be changing to the nationwide classifications.

This means that a number of different licence classifications are currently held on current licences

The classifications in question B10 are arranged so that approximately equivalent state or nation based classifications will be put into the same category in this questionnaire.

Identify the classification given to you by the respondent from the chart and then select a 1, 2 or 3 according to the category in which it falls.

Included below is an excerpt from the Drivers Licence Guide distributed by the Victorian RTA. It describes the types of trucks included in each nation based classification and, therefore, by reference back to the questionnaire, the type of truck implied by each of the state based categories.

If you have any difficulty refer to this and select a 1, 2 or 3.

TRUCK GROUP

LIGHT TRUCK: A 2 axle rigid truck, or any other rigid truck exceeding 13.9 tonnes gross vehicle mass, and includes such a truck with a trailer not exceeding 750 kg tare mass.

HEAVY TRUCK A rigid truck (other than a light truck) exceeding 13.9 tonnes gross vehicle mass, and includes such a truck with a trailer not exceeding 750 kg tare mass.

LIGHT ARTICULATED A 3 axle articulated truck or heavy trailer combination or any other articulated truck, or heavy trailer combination which does not exceed 22.4 tonnes gross vehicle mass.

HEAVY ARTICULATED An articulated truck, or heavy trailer combination which exceeds 22.4 tonnes gross vehicle mass.

ROAD TRAIN A truck to which is attaced more than one trailer.

Question B12 This is the first question that mentions "legs".
There are quite a few others.

For every question A LEG = A ONE ONE-WAY TRIP BETWEEN A STARTING POINT AND A STOPPING POINT.

For example: If driver is travelling from Melbourne to Sydney and back he is travelling two legs - one leg from Melbourne to Sydney and one from Sydney to Melb.

If driver is travelling from Melb. to Sydney to Brisbane - this trip is 3 legs.

Questions B22 and B23 : are for those drivers who OWN OR ARE PAYING OFF their truck only.

Section C

Questions 1, 2, 3,and 4 are OPEN QUESTIONS.

LET THE RESPONDENT GIVE HIS OWN UNPROMPTED ANSWERS, SELECT TEE ANSWERS GIVEN FROM TEE CODES ON PAGES 13 AND

15 AND NUMBER TEE CORRESPONDING BOXES IN TEE ORDER IN WHICH TEE ANSWERS ARE GIVEN.

Read the instructions on pages 12 and 14 carefully.

Remember: (1) Do not tick answers - Number them

(2) If the answer "GENERAL CONDITIONS" is given ASK THE RESPONDENT WHAT HE MEANS AND EITHER NUMBER FURTHER BOXES ACCORDING TO HIS ANSWERS OR WRITE HIS ANSWER NEXT TO THE "GENERAL CONDITIONS" BOX.

Section D

It is extremely important that you carefully explain the code to be used in this section

READ OUT TEE INSTRUCTIONS IN ITALICS SLOWLY AND WORD FOR WORD.

POINT OUT THE CODE ON CARD B

IF NECESSARY CONTINUE TO EXPLAIN TEE CODE WITE EACH QUESTION

Your instructor will brief you further about this section.

Section E

The same instructions as Section C apply

Last page

Record anything the driver offers - whether you think it is relevant or not.

Remember not to take to long with this section - just a few minutes to jot down anything that is on the driver's mind is all that is required.

SECTION 3: ESSENTIAL BACKGROUND INFORMATION

READ TEIS SECTION CAREFULLY

You are interviewing truck drivers in a restaurant on a truck route. For many of the questions in this questionaire we are interested in the driver's thoughts,

opinions and decisions about driving WHEN THE DRIVERS ARE DRIVING ALONG THAT ROUTE - we want to know what they are doing now and what they do on this route during other times of the day.

Make sure that you understand this when delivering the questions and MAKE SURE THAT THE DRIVER UNDERSTANDS THIS - ESPECIALLY WHERE IT IS EXPLICITLY MENTIONED IN THE QUESTION.

The following instructions describe how this orientation should be applied for each section of the questionnaire:

Section A

Questions 1-4: are general questions. If the driver does not have any difficulty in answering them you do not need to specifically refer to his current route of travel

If the driver indicates some difficulty in giving a general answer saying something like "It changes from place to place" or "It is different depending on where you are" then request that he give you an answer that describes what he generally finds when travelling along the route that he is now on.

Question 5: Emphasize the "on this route" in the question. If necessary, explain that you want to know what the driver does when travelling along this route.

Section B

This section asks for demographic information related to what the driver is and is doing at the time of the interview.

This section implies "on this route" and if you think it is necessary you should explain that. However, with the exception of question 17, it will most probably not be necessary to refer to the 'route-based' idea here.

Question 17: This question specifically refers to travel on the route that the driver is currently travelling on.

Section C

The specific aim of this section is to determine what influences the drivers speed of travel ON THE ROUTE THAT HE IS CURRENTLY TRAVELLING ON during the daytime and during the night time.

"On this route" is explicitly mentioned in the questions. However, it is very important that you emphasize and re-emphasize this "Route-based" orientation to the questions in this section.

Sections D and E

Use the same approach as Section A. The questlons are general. You only need to refer to "route-based" if you need to respond to any querles.

The only exceptions are Section D questlons 5 and 6.(D5 and 6) and Section E questlon 4(E4).

D5: "On this route" is explicitly mentioned. Please emphasize it.

E5 and 6 are the only questions in this questionnaire that do not refer to the route of current travel . We want to know what speed drivers travel at on the Eyre Highway.

APPENDIX 4

INSTRUCTIONS FOR INTERVIEWERS FOR QUESTIONNAIRE USE

APPENDIX 4: INSTRUCTIONS FOR INTERVIEWERS FOR QUESTIONNAIRE USE.

INFORMATION FOR INTERVIEWERS NO. 2

GUIDELINES FOR APPROACEING TRUCK DRIVERS

1. **Please read the following:**

The following paragraphs detail how you should approach a truck driver and ask him/her to respond to the questionnaire.

You should always introduce yourself using points 1 to 3 below, in that order.

Points 4, 5, 6 and 7 are included €or your reference. You should know this information and use it where *you* think it will make the respondent more comfortable or in response to specific questions.

Always wear your I.D. card.

Always have your letter of introduction at hand. Again, you may not need to use it but should produce it if you think it will help or if the respondent requires verification of the survey.

Please note:

We have run pilot studies of this survey and have found drivers to be courteous and cooperative, therefore we do not expect that you will have any queries or problems that you cannot handle by using the information provided here. However, IF THERE ARE ANY QUERIES OR PROBLEMS, PLEASE DO NOT HESITATE TO PROVIDE THE DRIVER WITH THE PHONE NO. OF THE FORS REPRESENTATIVE MR. X. SMITH PRINTED ON YOUR LETTER OF INTRODUCTION. Mr. Smith will be happy to discuss any such issues with the driver.

2. Approach to Driver

Always use the wording of points 1-3.

1. **Introduce yourself and briefly explain the purpose of the survey.**

"Hello, my name is .....I am doing a survey about truck drivers opinions about travel speeds and driving conditions for the Federal Office of Road Safety."

2. **Establish that respondent is a truck driver - ask for participation.**

"Are you a truck driver?" (if yes) "We'd like to know what you think about travel speeds and driving conditions. Would you have 10 minutes to answer some questions?"

3. Emphasize the confidentiality of the Study.

"Your answers to the survey are completely confidential . You cannot be identified as having answered and your answers cannot be identified from other drivers' answers. However, if there is, for any reason a question that you 'do not want to answer just tell me. It is your right to choose not to answer and I would rather leave the question blank than record a wrong answer."

You should be able to provide the following information if requested:

4. The FORS is a federal body responsible for research and recommendations about road safety issues such as speed limits. It does not set or collect penalties/fines.

5. FORS is genuinely interested in what the truck drivers think. This is an opportunity for them to say what they feel.

6. SIROMATH is an independent research company commissioned by the FORS to do this study for them. (In case you are asked SIROMATH is an independent company set up by CSIRO. It is not associated with any oil companies, trucking companies etc. In fact, it is because of the independence of such a research company that the FORS commlsslons them to do such research. SIROMATH can ensure complete confidentiality of respondents.)

7. The survey is being conducted in Queensland, N.S.W. and Vic. and a large number of truck drivers have already given and will be giving their opinions.

APPENDIX 5

SIGNIFICANT BUT UNREMARKABLE RELATIONSHIP BETWEEN PREFERRED SPEED LIMIT *AND* DRIVING EXPERIENCE

APPENDIX 5: SIGNIFICANT BUT UNREMARKABLE RELATIONSHIP BETWEEN PREFERRED SPEED LIMIT AND DRIVING EXPERIENCE.

Preferred speed limit and experience,

$$x^2 = 84.441 \quad df = 40 \quad p = 0.001$$

Result due primarily to response of 1 of the 2 drivers with over 40 years experience.

Result of no practical interest

Experience (Years)		100	110-120	120
0 - 5	No.	51.0	9.0	1.0
	%	79.7	14.1	1.6
5-10	No.	96.0	21.0	2.0
	%	80.0	17.5	1.7
10-15	No.	84.0	12.0	0.0
	%	85.7	12.2	0.0
15-20	No.	52.0	11.0	0.0
	%	80.0	16.9	0.0
20-25	No.	47.0	0.0	0.0
	%	88.0	6.0	0.0
25-30	No.	15.0	6.0	0.0
	%	71.4	28.6	0.0
30-35	No.	13.0	2.0	0.0
	%	86.I	13.3	0.0
35-40	No.	8.0	1.0	0.0
	%	88.9	11.1	0.0
40	No.	1.0	0.0	1.0
	%	50.0	0.0	50.0

APPENDIX 6

SIGNIFICANT BUT UNREMARKABLE RELATIONSHIP BETWEEN TEE PERCEPTION THAT POLICE CAUSE CRASEES *AND* DISTANCE TRAVELLED PER *ANNUM*

APPENDIX 6: SIGNIFICANT BUT UNREMARKABLE RELATIONSHIP BETWEEN THE PERCEPTION THAT POLICE CAUSE CRASHES AND DISTANCE TRAVELLED PER ANNUM.

Police X distance travelled per annum

x^2 = 111.431; d.f. = 64; p = 0.002

TABLE

Km/year ('000)	factor reported	1st. choice	2nd. choice	3rd. choice	4th. choice
1-99 (n=31)	0.0	0	0	0	0
100-199 (n=150)	1.3	0	0	0	1.3
200-299 (n=158)	4.4	1.9	0.6	0.6	1.2
300-399 (n=70)	2.9	0	0	1.4	1.5
400-499 (n=22)	4.5	0	0	0	4.5
500-599 (n=11)	0.0	0	0	0	0
600-699 (n=2)	0.0	0	0	0	0
700-799 (n=3)	33.3	0	0	33.3	0
800 (n=5)	0.0	0	0	0	0

The predominant reason for the statistically significant result is the response of 1 driver in the 700-799,000 bmh group. His report of "police" as a factor is evidenced as a 33.3% report of this factor as third most important contributory factor to accidents *for* the 700-799,000 km/year group. This result has no practical significance for the study,

APPENDIX 7

LOGISTIC REGRESSION ANALYSIS OF 100 KM/HR SPEED LIMIT PREFERENCE

APPENDIX 7: LOGISTIC REGRESSION ANALYSIS OF 100 KM/HR SPEED LIMIT PREFERENCE.

TRUCK DRIVERS SURVEY

TOTAL NUMBER OF RESPONSES USED IN THE ANALYSIS 430
LSN_101 : : : : : : 363
MRN_109 : : : : : : 67

DESCRIPTIVE STATISTICS OF INDEPENDENT VARIABLES

VARIABLE NO. NAME	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS
16 EXP	1.0000	9.0000	3.2140	1.7316	0.8359	0.2165
23 ACE	1.0000	5.0000	2.8581	1.0843	0.0308	-0.6687
27 KHYEAR	1.0000	9.0000	2.9395	1.3314	1.6713	4.7299
63 DT SPEED	1.0000	9.0000	3.9605	1.1223	0.2058	2.1247
64 NT SPEED	1.0000	10.0000	4.2651	1.4320	0.6179	2.0483

VARIABLE NO. NAME	CATEGORY INDEX	FREQ	DESIGN VARIABLES (1)	(2)	(3)
3 ROUTE	1	198	-1	-1	-1
	2	127	0	0	1
	3	2	7 0	1	0
	4	7	8 1	0	0
29 FTPT	1	415	-1		
	2	15	1		

PAGE 9 BMDPLR TRUCK DRIVERS SURVEY

STEP NUMBER 2 RWTE IS ENTERED

LOG LIKELIHOOD =	-113.988			
IMPROVEMENT CHI-SQUARE (2*(LN(MLR)) =	50.813	D.F.= 3	P-VALUE.	0.
GOODNESS OF FIT CHI-SQ (2*O*LN(O/E)) =	193.658	D.F.= 291	P-VALUE=	1.000
GOODNESS OF FIT CHI-SQ (D. HOSHER) =	3.735	D.F.= 2	P-VALUE=	0.155
GOODNESS OF FIT CHI-SQ (C.C.BROWN) =	10.474	D.F.= 2	P-VALUE.	0.005

TERM		COEFFICIENT	STANDARD ERROR	COEFF/S.E.
ROUTE.	(1)	-1.75	0.321	-5.45
	(2)	-0.203E+01	0.595	-0.341E+01
	(3)	0.861	0.366	2.35
DT SPEED		-1.32	0.184	-7.18
CONSTANT		7.30	0.832	8.78

APPENDIX 8

QUESTIONNAIRE FOR THE SURVEY OF TRUCK OPERATORS

APPENDIX 8: QUESTIONNAIRE FOR THE SURVEY OF TRUCK OPERATORS.

I.D NUMBER

SURVEY OF TRUCK OPERATORS

Strictly Confidential

(A)

(1) How many trucks does your company have?
(INCLUDE TRAILERS/TRUCKS AVAILABLE FOR SUBCONTRACTING)

1-2	1
3-5	2
5-10	3
11-20	4
21-30	5
31-50	6
51-100	7
101-200	8
201-300	9
301-500	10
over 501	11

(2) How many drivers do you employ?

[DO NOT INCLUDE OWNER-DRIVERS SUBCONTRACTED TO THE COMPANY - ONLY EMPLOYEES WHO DRIVE THE COMPANY'S TRUCKS].

1-10 _____ 1
11-20 _____ 2
21-30 _____ 3
31-50 _____ 4
51-100 _____ 5
101-200 _____ 6
over 200 _____ 7

(3) How many drivers/companies do you subcontract to?

1-10 _____ 1
11-20 _____ 2
21-30 _____ 3
31-50 _____ 4
51-100 _____ 5
101-200 _____ 6
over 200 _____ 7

(4) What sort of freight is carried by your trucks?

_____

_____

(SPECIFY)

(6) My drivers have more than enough time to reach their destination and they can organize their departure time and breaks accordingly.

1 2 3 4 5

(5) What states does your company operate in?

[TICK EACH STATE MENTIONED]

Victoria ____
N.S.W ____
S.A ____
W.A ____
N.T. ____
Queensland ____
ACT ____

(6) Do your drivers travel.....

Interstate 1
Intrastate 2
Both 3

(7) What is your position in the company?

_____

_____

(8) Are you .....

directly responsible for the setting of travel schedules _____1

involved in setting of travel schedules _____

manager or other position with direct knowledge of the schedules set _____3

(B)

We would like to know your opinion about speed limits and truck driving along the routes in Vic, N.S.W. and S.A.where the speed limit has been increased to 90kph. I am going to read out some general statements to you and I would like to know how much you agree with them. You can choose to strongly agree, mildly agree, neither agree nor disagree , mildly disagree or to strongly disagree.

Here is the first statement:

(1) The trucks in your company get to their destination more quickly now than they did before the speed limit was increased to 90kph.

Do you .....

Strongly agree	Mildly agree	Neither agree nor disagree	Mildly disagree	Strongly disagree
1	2	3	4	5

(2) I now expect my truck drivers to get to their destinations more quickly
but do not set my schedules according to that expectation.

1 2 3 4 5

(3) I have revised my schedules due to the increased speed limit

1 2 3 4 5

5

(4) If the speed limit was increased to 100kph I would revise my schedules.

1 2 3 4 5

(5) If the speed limit was increased to 100kph I would expect the drivers to arrive at their destinations more quickly than they do now.

1 2 3 4 5

(C)

(1) Have you ever been a truck driver?

Yes_____1
No_____2

[IF YES]

(2) Did you drive interstate?

Yes_____1
No_____2.

(D)

(1) What would you like the general truck speed limit to be on .....

,.....Freeways?

KPH

no limit	1
90	2
100	3
110	4
120	5
over120	6

..Other Major Highways/Open Roads?

KPH

no limit	1
90	2
100	3
110	4
120	5
over120	6

(2) How well do you agree with the following statement:

I would be happy with truck speed limits the same as car speed limits.

Strongly agree	Mildly agree	Neither agree nor disagree	Mildly disagree	Strongly disagree
1	2	3	4	5

APPENDIX 9

NATIONWIDE TRUCK LICENCE CLASSIFICATIONS FROM *JANUARY* 1, 1987. EXERPT E'ROM RTA PAMPELET "DRIVERS LICENCE GUIDE", 1987.

APPENDIX 9: NATIONWIDE TRUCK LICENCE CLASSIFICATIONS FROM JANUARY 1, 1987. EXERPT FROM RTA PAMPHLET "DRIVERS LICENCE GUIDE", 1987.

TRUCK GROUP	
Light Truck	A 2 axle rigid truck, or any other rigid truck not exceeding 13.9 tonnes gross vehicle mass, and includes such a truck with a trailer not exceeding 750 kg tare mass.
Heavy Truck	A rigid truck (other than a light truck) exceeding 13.9 tonnes gross vehicle mass, and includes such a truck with a trailer not exceeding 750 kg tare mass.
Light Articulated	A 3 axle articulated truck or heavy trailer combination or any other articulated truck, or heavy trailer combination which does not exceed 22.4 tonnes gross vehicle mass.
Heavy Articulated	An articulated truck, or heavy trailer combination which exceeds 22.4 tonnes gross vehicle mass.
Road Train	A truck to which is attached more than one trailer.