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AN EXPLORATORY INVESTIGATION OF ASPECTS OF DRINK-DRIVING AND ENFORCEMENT IN RURAL AREAS OF VICTORIA

by

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August 1996

MONASH UNIVERSITY ACCIDENT RESEARCH CENTRE
REPORT DOCUMENTATION PAGE

Report No.	Report Date	ISBN	Pages
93	August 1996	0 7326 0673 X	30

Title and sub-title
An Exploratory Investigation of Aspects of Drink-Driving and Enforcement in Rural Areas of Victoria.

Author(s)
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Type of Report & Period Covered
GENERAL, 1996

Sponsoring Organisation
This project was funded through a research contract with the Transport Accident Commission

Abstract

This report details the results of a small survey of hotel patrons in rural areas and presents a speculative analysis of the nature of drink-driving and drink-drive enforcement in rural areas of Victoria. The report was prepared to assist in the development of directions for future research into the drink-driving problem in rural areas.

Key areas for future research and countermeasure development and targetting include the uncertainty of detection, the recency of an enforcement presence in a specific area, the identification of targetable groups of the rural population for countermeasures, and the social factors that may mediate the effects of drink-drive enforcment operations in these areas.

Key Words
(IRRD except where marked *)
Enforcement, Police, Alcohol,
Driver Behaviour, Drink-Driving*
Random Breath Testing*,
Rural Areas*

EXECUTIVE SUMMARY

This report summarises the results of a survey of hotel patrons in four towns in rural areas of Victoria. The survey was originally conducted as part of an evaluation of the likely effects of the use of additional evidential breath testers by the Victoria Police in rural areas, but included items that were considered helpful in developing an increased understanding of the nature of drink-driving in rural areas and the effect of enforcement. It is argued that the drink-drive problem is likely to be different in rural areas and that there is a need to take the relevant differences into account when developing and targeting countermeasures.

A total of 94 hotel patrons were sampled from two hotels in each of the Victorian rural towns of Stawell, Horsham, Nagambie, and Wangaratta. The survey was conducted at the hotel premises and took about ten minutes to administer.

The analysis of the data was conducted under liberal statistical constraints due to the exploratory nature of the study. The results are, therefore, somewhat speculative and are best considered as pilot results that might be used to provide direction for further research in this area.

Key results of the study were:

- There were substantial differences between the enforcement experiences of hotel patrons in the four towns that may impact on the effectiveness of drink-drive enforcement in Stawell in particular.
- Almost half the respondents indicated that they would choose to drive home from the hotel by an alternative route if they knew about the location of a Booze-bus. 41% of respondents indicated they would change their behaviour in a more-appropriate direction under these circumstances.
- Of 39 drivers judged to be near or over the legal maximum blood alcohol concentration, 9 indicated they would drive home or back to work.
- Being stopped by the Police was a source of concern for half the respondents.
- Recency of exposure to drink-drive enforcement was an important factor in maximising the effectiveness of drink-drive enforcement.
- Drivers who lived further from the hotel seem to be an "at-risk" group.
- Uncertainty of enforcement and the lack of driver control over the risk of detection were important factors for the effectiveness of drink-drive enforcement.

Given the speculative nature of these results, it is recommended that the key findings be used to give direction to a research program in the area of rural drink-driving. This program could profitably focus on the effects of uncertainty and recency, geographical factors, targetable sub-groups of rural residents, and the social factors that may reduce the level of drink-driving.

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INTRODUCTION

Potential countermeasures against drink driving can include a wide range of legislative, enforcement, educative, and rehabilitative interventions, only some of which have been shown to reduce the impact of drink driving. The focus of countermeasures in Australia has been in the enforcement and legislative areas with supportive educational programs using mass media publicity targeting both knowledge of the legislation and enforcement programs and also attitude and behaviour change. Victorian evidence (Newstead, Cameron, Gantzer, and Vulcan, 1995) demonstrates the effectiveness of both the legislative and educational programs in this jurisdiction.

Random breath testing (RBT) was introduced in Victoria in 1976 (Cameron, Strang, & Vulcan, 1978; Homel, 1988) and most other states and territories of Australia followed during the next decade. RBT involves stopping vehicles (either at random or all vehicles in the traffic stream) and requiring drivers to undertake a preliminary breath test for the presence of alcohol. Homel (1988) notes that RBT occurs at different levels in the different states of Australia and that the results of RBT have depended on the level of implementation. Early RBT use in Victoria was characterised by a generally low level of enforcement with periods of high level campaigns, while in New South Wales and Tasmania, RBT was implemented at continuously high levels (Homel, 1988). While accepting the effect of intense enforcement campaigns in Victoria during the early years of RBT, Homel (1988) remains unconvinced of the long term potential of low-level RBT. In New South Wales, however, there has been a substantial and long term effect on crashes that has been attributed to RBT and the accompanying publicity and public education campaigns (Arthurson, 1985; Homel, 1988).

Increased levels of RBT occurred in Victoria from 1990. Newstead et al. (1995) have shown that the monthly number of preliminary breath tests conducted by the Victoria Police at random breath test stations in the period 1983 to 1992 was inversely related to the number of serious casualty crashes, but only in the Melbourne Statistical Division and not in the rest of the State. These authors estimated that RBT has contributed to a 6-7% annual reduction in the number of serious casualty crashes in Victoria in the period 1990 to 1993.

The impact of high levels of RBT has been clearly and consistently demonstrated in Australia, and a number of other countries have taken up this enforcement technique.

Mechanisms of RBT

RBT is generally postulated to act on the behaviour of drivers through the mechanism of deterrence. Deterrence is a concept taken from criminology, and refers to the reduced probability of a behaviour occurring in the presence of a perceived threat of some negative consequence. This definition is general enough to encompass a range of possible psychological and social mechanisms. The action of RBT through a deterrence process (whatever that might be) is consistent with results such as those reported by Newstead et al. (1995), where increases in the level of RBT were related to

decreases in the number of serious casualty crashes in the Melbourne area, holding other factors constant.

While empirical evidence is generally consistent with a deterrence model of the effects of RBT, there are some issues that have not received sufficient attention in the literature. These include the complexity of the causal influences on human behaviour, the tendency to accept deterrence theory as an unfalsifiable doctrine, and the assumption basic to deterrence theory that human behaviour is rationally guided. The first of these issues is critical here.

Human behaviour occurs in psychological, social and cultural contexts that add a substantial level of complexity to attempts to explain that behaviour. The application of deterrence theory to drink-drive enforcement has not, so far, taken these contexts into account at a sufficient level of complexity. The social context in which drink-driving occurs has received some attention (e.g. Hauge, 1988; Snortum, 1988; Votey, 1988), but there is a tendency to apply deterrence theory in a relatively simplistic fashion that does not do justice to the complexity of human behaviour.

Differences between rural and urban effects of RBT are important in this context. The nature of the population distribution and the related distribution of the drink-driving problem has meant that until recently the main emphasis of drink-drive enforcement programs in Victoria (and most likely in other states) has been in the highly populated urban areas surrounding cities like Melbourne and the larger regional centres. Recent increases in RBT in rural areas of Victoria were expected to have a deterrent effect and therefore an effect on crashes, but the pattern of results differed from the expected pattern.

From a psychological, social, or cultural viewpoint it is not at all surprising that there may be differences between the effect of RBT in urban and rural contexts. Indeed, it would be surprising if the effects in these areas were the same. This report was developed in the context of concerns that some aspects of the rural context of recent increases in RBT may act to reduce the level of deterrence associated with drink-drive enforcement in these areas.

Differences Between Urban and Rural Areas

The relationship between RBT, deterrence, and crash involvement relies on an actual threat of detection, the perception that there is a risk of detection, and on the consequences of detection being significant enough to warrant a change in behaviour. There are some features of the rural context that may act to weaken this relationship.

Experience of Low Probability of Detection

Deterrence of drink driving relies on an actual risk of detection that is consistent with the perceived risk of detection. Where there are low actual levels of risk, enforcement programs may have an initial effect but decline in effectiveness as drivers adjust their perceptions of risk to fit reality. Ross (1982) and Homel (1988) have noted, in relation both to road-block approaches to drink-drive enforcement and to early Victorian RBT,

that there were short term effects due to an elevated level of perceived risk which soon declined as the dissonance between perceptions and reality became clear to drivers.

Although there has been a significant level of drink-drive related publicity in rural areas which has been associated with a reduction in crash frequencies (Newstead et al., 1995), the historically low levels of enforcement may have resulted in a low level of perceived risk amongst rural drivers. Increasing the level of enforcement and therefore the actual risk of detection would not be expected to have an immediate effect on the perceived risk of detection and, therefore, deterrence and crash involvement. The number of tests conducted in metropolitan and rural areas is shown in Figure 1.

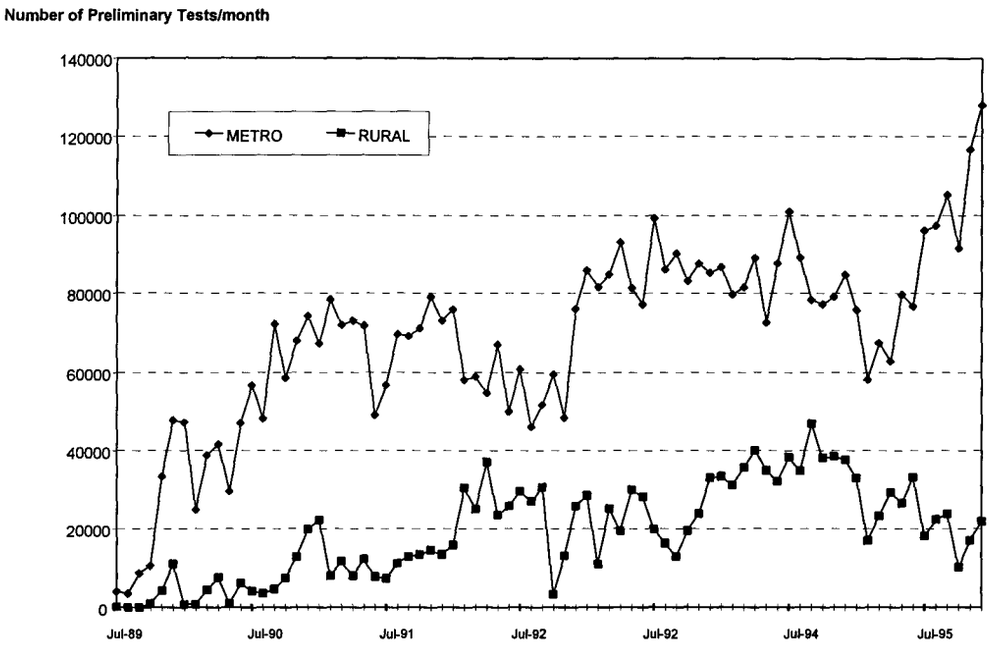

Figure 1: The Number of Bus-Based Random Breath Tests Conducted Each Month in Melbourne and the Rest of Victoria from 1989 to 1995.

The relatively low levels of rural enforcement may, in the context of ongoing drink-drive publicity, have a long-term impact on the effectiveness of future drink-drive enforcement programs. Living in a context where there is a disparity between publicity campaigns and the actual level of enforcement would be expected to inure rural drivers to this disparity. Any increase in the actual risk of detection would most likely need to occur over a prolonged time period in order to impact on the perceptions of drivers in these circumstances. The recent decline in the amount of rural testing is of concern for the same reason.

Community Aspects

Rural communities are smaller than urban communities. The size difference is thought to result in communities that are socially more cohesive (Amato, 1981, 1983) than

those in urban areas. There are a number of consequences for drink-drive enforcement that may follow from this heightened level of social cohesion.

It might be expected that some aspects of drink-drive enforcement would have a greater impact in a context in which news of increased enforcement levels travels more quickly. The social cohesion of smaller rural communities would be expected to enhance the effect of increased enforcement through a word-of-mouth effect in which news of RBT operations or people being detected and punished would spread through the community and so affect the perceived risk of detection.

There are mechanisms, however, which may weaken the effect of RBT. Social cohesion might be expected to lead drivers to be more proactive in helping other local residents to avoid detection. Thus news of the presence of an RBT station may reach potential drink-drivers while operations are occurring, allowing avoidance behaviour and so reducing the effect of the increased enforcement. Similarly, news of drivers successfully avoiding detection passed around more readily in a cohesive community would be expected to weaken the impact of increased levels of enforcement.

Experience of Enforcement

The enforcement experiences of rural drivers are likely to differ from those of urban drivers. Police members have discretion to deal with traffic offences in a manner that best suits the situation of the offence, and it might be expected that rural Police members, as part of a cohesive community, may be more inclined to use that discretion than urban Police members who are less likely to know the context in which an offence has occurred. In some circumstances it may be appropriate to use this discretion for drink-drive offenders, and if this occurs in rural areas other drivers would be expected to find out about it. Knowledge that other drivers have escaped punishment in this way may reduce the perceived risk of consequences once detected and so impact on the effectiveness of RBT.

Travel Distances and Routes

The possibility that rural drink-drivers might have more knowledge about the operation of RBT and therefore opportunity to avoid detection was discussed above. The nature of the road network in rural areas may encourage drink-drivers to use minor roads as a way to avoid any Police presence whether they are aware of RBT or not. This is likely to be true for drink-drivers who live outside small communities, and it is possible that in avoiding potential or known enforcement locations drivers are at a higher risk of crashing and being injured than they would be on better-quality, major roads. In this context, then, drink-drive enforcement might be expected to increase the casualty crash risk for some drivers - specifically those who choose to avoid detection.

This Project

Data for this project were collected as part of another project which investigated the likely benefits of providing additional evidential breath test devices to Police in rural areas in Victoria (Harrison and Cameron, 1996). Harrison and Cameron presented

data from a survey of patrons of hotels in rural areas. The present report discusses the results of this survey in greater detail, with a focus on the behaviour of potential drink-drivers in the presence of enforcement in rural areas.

Hotel patrons were selected as participants as they were thought more likely than other groups to include drivers who have driven with illegal blood alcohol concentrations. Diamantopoulou, Cameron, and Mullan (1995) have shown, for example, that around 35% of drink-drivers in rural areas had been drinking alcoholic drinks in a hotel prior to their detection. Hotel patrons were considered, therefore, to represent those country residents who would be the natural target for any drink-drive countermeasures such as additional enforcement. Patrons were interviewed in the hotels and were asked a series of questions concerning their experiences of enforcement, their knowledge about others' experience of enforcement, and their behaviour in the presence of enforcement.

The present study needs to be seen as a preliminary examination of a new area of concern. The effectiveness of drink-drive enforcement and its mechanisms in rural areas has not been examined until now, and this study represents a starting point for future work in this important area. It should also be noted that in many ways this report is speculative. The results are based on a small sample of potential drink drivers in a small sample of rural hotels, and the usual conservative statistical controls on the interpretation of results have been relaxed considerably. This might be expected to reduce the level of scientific rigour of the report, but it does allow a range of recommendations to be made for further work that might not be possible within the normal constraints of scientific conservatism. The results, therefore, are indicative only, and should be taken as potential directions for further, rigorous work rather than as definitive findings on drink-driving in rural areas.

METHOD

Participants

Participants were 94 patrons of hotels in 4 country towns in Western and Northern Victoria - Stawell, Horsham, Nagambie, and Wangaratta. Two hotels in each town were used to select participants, and data collection occurred in the afternoon and night of Tuesday to Friday in the first week of February 1996.

The mean age of participants was 38.4 years (sd = 13.9). Some characteristics of the sample are summarised in Table 1. 85% of the sample were males, and 64% were aged 31 years or older. 27% were employed in unskilled or semiskilled occupations, with 17% in each of trade occupations or a profession.

Table 1: Some Characteristics of the Sample of Rural Residents

VARIABLE		NUMBER	PERCENT[1]
SEX	Male	80	85.1
	Female	14	14.9
AGE	18-21 years	12	13.0
	22-30 years	21	22.8
	31-50 years	39	42.4
	51 years and above	20	21.7
EDUCATION	Up to year 10	42	44.7
	Year 11 / 12	35	37.2
	TAFE / Tertiary	17	18.1
WORK	Admin/clerical	5	5.4
	Professional	16	17.2
	Trade	16	17.2
	Sales & Service	9	9.7
	Un/semi skilled	25	26.9
	Self-empl/home dut.	11	11.8
	Farmer	1	1.1
	Student	1	1.1
	Unempl. / Retired	9	9.7

1 - Percentages are based on cases where data were known

Data Collection

Interviews were conducted in person using a questionnaire designed to collect data concerning the effect of drink-drive enforcement on road-use behaviour. The questionnaire is in Appendix A. The questionnaire included items relating to the experience of drivers with drink-drive enforcement, the knowledge of drivers concerning drink-drive enforcement activity, and the road use behaviour of drivers

given the presence of drink-drive enforcement activity. Respondents were not prompted in the case of options with multiple alternatives, and multiple responses were allowed in these items.

Potential participants were approached by one of two research assistants involved in the project and were asked if they would be prepared to take part in a confidential survey of attitudes to random breath testing. The questionnaire took 5-10 minutes to complete, and no information was collected that could identify individuals or the hotel.

The surveys were conducted in the hotel and the response was generally positive. About 30% of potential participants refused to take part.

RESULTS AND DISCUSSION

General Comments

The sample of respondents used in this survey was relatively small, and the sample of hotels used to select respondents was also small. While tests of statistical significance are reported with the results discussed below, it is likely that the small sample size was insufficient to provide an appropriate level of statistical power. For this reason, and because the primary purpose of this report is exploratory rather than analytical, statistical tests of significance are reported using a liberal type 1 error probability of .20 (i.e., the reliability that the stated finding was due to chance, rather than being evidence of a real difference, could be as large as 1 in 5). This may lead to some incorrect conclusions but was thought appropriate given the nature of the report. To facilitate interpretation of the results, actual probability levels are given with each significant statistical test result. In addition to this, liberal use has been made of descriptions of the data where patterns are apparent but where statistical testing would not normally support the conclusions. It is stressed that the exploratory purpose of this report must be considered by the reader.

As will be discussed, there is clearly a need for further research in this area. The data reported here were obtained by "piggy-backing" additional data-analysis onto a small project conducted for another purpose. The data reported below, however, could serve to direct any further research into drink driving and enforcement in rural areas.

The Sample

Some characteristics of the sample are presented in Table 1 in the Method Section. 80 (85.1%) of the 94 respondents were male, and ages ranged from 18 to 74 years. 41 (44.1%) respondents worked in trade or semi- and unskilled occupations, and only one of the respondents reported being a farmer. Almost half (42) of the respondents had completed 4 years of secondary education or less.

Respondents lived an average of 25.5 km from the hotel and had lived in the area for an average of 17.2 years. At the time of the interview, they had been at the hotel for an average of 1.6 hours. There were 26 respondents from Horsham, 36 from Nagambie, 13 from Stawell, and 19 from Wangaratta.

Differences Between Towns

Although the samples in each town were relatively small, there were some differences between the towns that were considered important.

There were differences between the average ages of respondents in the four towns ($\chi^2_{(3)} = 9.2, p = .03$)[1], with respondents in Stawell and Horsham (average ages of 46.6

[1] The significance of comparisons between groups of respondents was determined using the Kruskal-Wallis H test. This technique is similar in logic to a one-way analysis of (P.T.O.)

and 42.6 years respectively) reporting older ages than those in Nagambie or Wangaratta (average ages of 34.2 and 34.9 years respectively).

Respondents in the four towns reported different average distances to home from the hotel ($\chi^2_{(3)} = 20.6, p = .0001$). Respondents in Nagambie lived an average of 2.7 km from the hotel, respondents in Stawell and Wangaratta lived an average of 67.8 km and 61.3 km away, and in Horsham the average distance from the hotel to home was 93.1 km.

The average length of time respondents had lived in the area also differed between towns ($\chi^2_{(3)} = 9.4, p = .03$), with Stawell respondents having lived for the longest time period in the area (28.6 years), and Horsham respondents the least (11.8 years).

Where these differences were of concern in the analysis of the survey data, responses were analysed by town. These analyses are included below as appropriate, but the reader needs to consider the small sample size in each town and the small sample of hotels in each town when interpreting them. It is likely that the differences between hotels within towns are substantial, and the use of only two hotels in each town means that any comparisons between towns may reflect the nature of the usual clientele of the hotels rather than the nature of residents or drink-drivers in the towns.

Experience of Drink-Drive Enforcement

Respondents reported having been breath tested an average of 2.5 times at random breath test stations and 0.9 times in other contexts. They reported having been passengers in a vehicle when the driver was breath tested an average of 1.7 times at random breath test stations and 0.6 times in other enforcement contexts. 80 (86%) respondents indicated that they thought there had been an increase in the amount of random breath testing in the last couple of years.

72 (76.6%) respondents had been required to undertake a preliminary breath test at a random breath test station, and 86 (91.5%) respondents knew another person who had been tested in this way. 27 (28.8%) respondents reported having been subjected to an evidential breath test as a result of an illegal blood alcohol concentration in a preliminary test, and 66 (70.2%) respondents knew someone else who had been required to take an evidential test. 52 (55.9%) respondents reported that they knew someone else who was "a bit over" over the legal maximum blood alcohol concentration at a preliminary breath test but who had avoided any punishment, presumably at the discretion of the Police member.

These data suggest that there is widespread experience of drink-drive enforcement in the sample and high levels of knowledge of the drink-drive enforcement experiences of other drivers. This is so in both the case of preliminary breath testing and evidential breath testing when a driver has already been detected over the legal limit. On the negative side, however, over half the respondents knew of someone who had managed to avoid punishment at the discretion (presumably) of the Police member involved in

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variance but uses the ranking of respondents as the basis for analysis. This avoids the need to make assumptions about the distribution of the data, which in the present case would have been inappropriate. The H statistic is distributed as χ^2

detecting the offence. This knowledge may act to reduce the impact of drink-drive enforcement as it may lead to a reduced perception of the likelihood of punishment following from detection, taking away some of the impact of enforcement efforts in these areas.

Respondents in different towns differed in how often they had been tested at an RBT station ($\chi^2_{(3)} = 11.4$, $p = .01$). Respondents in Stawell reported an average of 0.7 experiences of being tested while respondents in Horsham, Nagambie, and Wangaratta reported averages of 3.3, 2.5, and 2.4 experiences of RBT respectively. This result is fairly consistent with the actual level of RBT activity in these areas. In the period from November 1993 to December 1994, for example, RBT activity in the Stawell Local Government Area was less than that in the other three areas. In this period, there were 2,038 preliminary breath tests conducted at random breath test stations in the Stawell area, compared to 5,039 (Horsham), 10,908 (Goulburn, which surrounds Nagambie), and 40,566 (in and around Wangaratta). This suggests that there is unlikely to be a high perception of the risk of detection for drinkers in the Stawell area.

Those respondents who indicated that there had been an increase in the amount of random breath testing had an average younger age (37.2 years) than those who felt there had not been an increase (45.0 years) ($\chi^2_{(1)} = 3.9$, $p = .05$). They also reported having been a passenger when the driver had been breath tested at other than an RBT station more often (0.6 times) than those who felt there had not been an increase in RBT activity (0.2 times) ($\chi^2_{(1)} = 2.3$, $p = .13$).

Respondents in the four towns reported different amounts of experience of others escaping punishment for drink driving. 76.9% of Stawell respondents reported knowing someone who had been detected over the limit but who had avoided punishment, most likely benefiting from the use of Police discretion. This compared to 48.1%, 42.0%, and 30.6% of respondents in Horsham, Wangaratta, and Nagambie respectively. This result, combined with the difference in experiences of RBT reported by respondents in the four towns discussed above, suggests that enforcement activity in the Stawell area may be at risk of having only a weak impact on the incidence of drink driving, although the small sample of hotels and respondents makes it difficult to determine the likely severity of this problem.

Table 2 shows the experience of various aspects of drink-drive enforcement in temporal terms, in each case only for those respondents who reported having experienced each event. The average time since being tested at a random breath test station was 2.2 years, with the average time since someone was last known by the respondent to have been tested in the same way being 0.8 years. Similarly, the average time since last being breath tested away from a breath test station was reported to be 3.1 years, and the average time since another person was last known by the respondent to have been breath tested in this way was 0.9 years.

In the case of evidential breath tests, respondents reported that the average time since last having been required to undertake an evidential test was 7.0 years, while the time since another person was last known to have been required to undertake this test was 1.9 years.

In one respect the amount of time since an event last occurred would be expected to reflect the rate (over time) at which the event occurs. Thus an event that last occurred

relatively recently might be regarded as more common than one which occurred at a more distant time in the past.

The time since the most recent experience of being tested at an RBT station differed for respondents in the four towns ($\chi^2_{(3)} = 5.3$, $p = .15$), with Stawell respondents reporting that, on average, the most recent experience of testing was 4.6 years ago, Horsham and Nagambie respondents 1.8 years and 2.2 years ago, and Wangaratta respondents 1.3 years ago. Respondents in the four towns who could recall another driver having been tested at an RBT station differed in their recollection of the time that had elapsed since the last event of this type as well ($\chi^2_{(3)} = 11.7, p < .05$). Stawell respondents reported that the most recent other person tested had been tested an average of 3.2 years ago. Respondents in the other towns reported that the average times since the last other person was known to have been tested were 0.7 years (Horsham), 0.4 years (Nagambie), and 0.5 years (Wangaratta). These results are consistent with the result discussed above in which respondents in Stawell reported less experiences of having been tested at RBT stations.

The last time another person was known to be tested at an RBT station also differed between respondents who felt there had been increased RBT activity (an average of 0.74 years ago) and those who felt there had been no increase in RBT activity (an average of 1.34 years ago) ($\chi^2_{(1)} = 6.1, p < .05$). This suggests that beliefs about the changing level of RBT activity are related to the knowledge of others' experiences of being tested at an RBT station. Respondents who have recent knowledge of another being tested are those who believe there has been an increase in testing activity. This is consistent with the earlier suggestion that the spread of knowledge through a rural community about enforcement experiences may influence perceptions of the risk of detection.

Table 2: Mean Time Since Various Experiences Of Drink-Drive Enforcement Amongst Hotel Patrons

Experience of Drink-Drive Enforcement	N of cases *	Years Since it Occurred
Know someone who was breath tested at an RBT station	73	0.8
Know someone who was breath tested - not at an RBT station	54	0.9
Was a passenger when the driver was tested - not at RBT	23	1.3
Know someone who had to take an evidential test	61	1.9
Was a passenger when the driver was tested at an RBT station	55	2.0
Know someone who was over .05 but avoided an evidential test	49	2.1
Was breath tested at an RBT station	72	2.2
Was breath tested - not at an RBT station	42	3.1
Was required to take an evidential test	27	7.0

* The number of cases in each row reflects those people (out of a total of 94 surveyed) who reported the experience and who were able to recall how long ago it occurred

Knowledge of Enforcement Practice

Respondents were asked to nominate the methods used by the Police to detect drink-drivers. 90 (95.7%) of respondents nominated random breath testing. 33 respondents nominated breath testing in general, and 16 respondents nominated blood tests.

73 (88.0%) of respondents indicated that evidential breath test devices were located at local Police Stations, and 6 (7.2%) indicated that they were located at other Police Stations. 18 (21.7%) of respondents indicated that the devices were located in booze buses.

The average time since the most recent presence of a booze bus in the area was reported to be 8.1 weeks. This differed between respondents who had increased their use of alcohol (average of 13.6 weeks) and those who had not changed or had reduced their use of alcohol recently (average of 6.8 weeks) ($\chi^2_{(1)} = 6.4, p < .05$). Thus there is a relationship between recent changes in alcohol use and recollection of recent RBT activity in the area such that those respondents who could recall more-recent RBT activity were also those respondents who either had not changed their alcohol consumption or who had reduced it. Those respondents who could only recall more-distant RBT activity were respondents who had increased their use of alcohol. This is a positive finding for the use of visible RBT activity in rural areas, although it is not possible to determine the extent to which the relationship is a causal one.

General Behavioural Intentions

Respondents were asked how they would behave given two scenarios - if they knew about the location of an RBT station, and if the general level of enforcement increased. These measures of behavioural intention are key aspects of the present study as they were thought to be potential guides to the effect of RBT in rural areas.

Figure 2 shows the responses to the first question. Responses to the second question were not analysed as they reflect general behavioural intentions in a non-specific situation. These were thought unlikely to be well correlated with actual behaviour.

This item allowed for multiple responses, and responses were unprompted to ensure they were not influenced by the researchers. In Figure 2 it is clear that almost half of the respondents indicated that with the availability of information about the location of a booze bus they would choose to avoid it by driving home on another route. Only 6% of respondents indicated they would drink less, but 21.4% said they would try to arrange for another driver.

The road safety consequences of this are important. Avoiding RBT locations in rural areas is likely to involve the use of minor roads. When under the influence of alcohol, the use of potentially unfamiliar, less safe roads is likely to increase the risk of crashing.

It was considered important to look at the differences between the respondents who indicated that they would avoid RBT stations and others, and between those who indicated they would reduce their drinking and others.

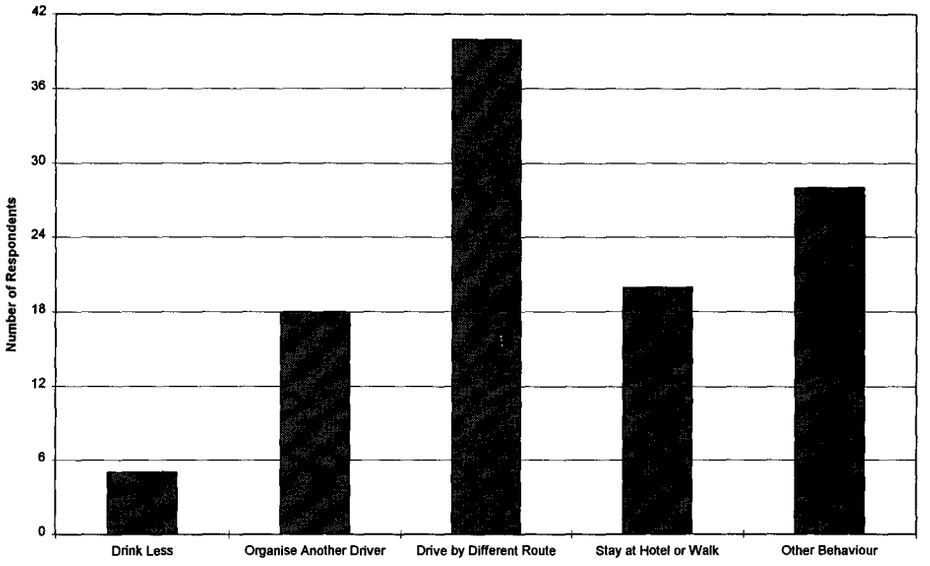

Figure 2: Responses to the Item "If you found out about a booze bus before hand, or if you were at the pub and someone said there was a booze bus at a particular spot - What would you do?"

Avoiding Enforcement

Respondents were divided into two groups - those who indicated that they would change route to avoid an RBT station if they knew of its presence and those who did not state this as a behavioural intention. 40 respondents indicated they would change route. The results of comparisons between these groups are shown in Table 3.

There were a number of significant differences between drivers who would avoid the RBT station and those who would not.

- Avoiders reported more instances of being tested at RBT stations and being a passenger in a vehicle when the driver was tested than non-avoiders.
- Avoiders knew fewer other people who had been tested at RBT stations than did non-avoiders.
- Avoiders who know of someone who had been required to have an evidentiary test reported that the most recent instance of this happened a longer time ago than was the case for non-avoiders who knew of someone in the same situation. Similarly, avoiders who knew of someone who had avoided punishment once detected over the limit reported that the last time this had occurred was further in the past than was the case for non-avoiders who knew someone with this experience.

The pattern in these results appears to be that personal experiences of RBT are associated with avoidance behaviour, but that word-of-mouth knowledge of others' experiences is associated with people who do not intend to avoid enforcement. This

may reflect a difference between the psychological effect of personal experience of enforcement and second-hand knowledge. The personal experience may provide the driver with a sense of mastery over the situation leading to the belief that avoidance is possible, while the uncertainty of word-of-mouth knowledge may reduce this sense of mastery and therefore make it less likely that avoidance is seen as an option.

Table 3: Enforcement Experiences and Characteristics of Drivers Who Intend to Avoid an Enforcement Location if Known

Variable	Mean for Avoiders	Mean for Others	Significance Test Result
Number of times tested at RBT station	3.3	1.9	p = .004
Weeks since last time tested at RBT station	100.7	125.0	ns
Number of times a passenger when driver tested at RBT station	2.3	1.4	p = .02
Weeks since last time a passenger when driver tested a RBT station	101.5	111.5	ns
Number of other people known to be tested at RBT station	5.9	8.5	p = .12
Weeks since last other person known to be tested at RBT station	50.0	35.1	ns
Number of times breath tested at other than RBT	1.1	0.8	ns
Weeks since last time breath tested at other than RBT	145.4	171.9	ns
Number of times a passenger when driver breath tested at other than RBT	0.7	0.5	ns
Weeks since last time a passenger when driver was breath tested at other than RBT	78.8	54.9	ns
Number of people known to be breath tested at other than RBT	3.4	6.5	ns
Weeks since last time a person was known to be tested away from RBT	59.9	36.1	ns
Weeks since last time required to undergo evidential test	394.8	338.6	ns
Weeks since last time someone else known to require an evidential test	123.7	77.5	p = .12
Weeks since last someone else known to avoid punishment when over the limit	141.9	79.9	p = .07
Weeks since last time RBT was conducted nearby	7.5	8.5	ns
Number of visits to the hotel each month	11.5	12.1	ns
Age	38.6	38.2	ns
Distance from hotel to home	22.4	27.8	ns

The non-significant results are consistent with this pattern. In general, avoiders were more likely to have had direct experience of drink-drive enforcement or more recent experience than non-avoiders, and non-avoiders were more likely to have indirect

knowledge of drink-drive enforcement or more recent indirect knowledge than avoiders. The consistency of this difference between avoiders and others suggests that this may be a profitable area for further research, in particular addressing the importance of uncertainty in rural drink-drive enforcement as a factor in reducing the likelihood of drink-drivers continuing to offend while attempting to avoid detection.

Appropriate Behavioural Intentions

Only 5 people responded that they would change their drinking behaviour if they knew the location of an RBT station. This was not considered a sufficient number to warrant analysis as a group, but there were additional respondents who indicated they would arrange for someone else to drive (18) or stay away or walk home (20). Allowing for multiple responses, this made a group of 39 respondents who indicated they would change their behaviour with knowledge about the presence of enforcement in a way that would be appropriate from a road-safety point of view.

Comparisons between these respondents and the other respondents in the sample are shown in Table 4.

There were a number of significant differences between these groups of respondents.

- A longer time period had elapsed since the last time respondents had been tested at an RBT station for those respondents who intended to behave appropriately compared to the other respondents.
- Similarly, respondents who intended to behave appropriately when informed about the location of an RBT station had less experience of being a passenger in a vehicle when the driver was breath tested at an RBT station than other respondents.
- The respondents with the appropriate behavioural intentions reported a longer time period since the last instance of RBT operations in their area.

The pattern including non-significant results was interesting. While the results relating to the number of experiences with drink-drive enforcement were in the unexpected direction - those with appropriate intentions appear to have had less experience of drink-drive enforcement - the results in relation to the recency of drink-drive enforcement were in the expected direction. These results suggest that the group of drivers with appropriate intentions were more likely to have had recent experience or knowledge of drink drive enforcement.

It is possible that the aggregation of respondents with different responses to an enforcement presence (although all appropriate in a road safety sense) has affected this analysis. This possibility would need to be investigated with a larger sample size to allow data analysis without aggregation across response items. Regardless of this, however, there is a suggestion in these data that the recency of enforcement-related experiences may have significant consequences for the intentions of drivers. Behavioural intentions reflect underlying attitudes, and although they are not necessarily a major determinant of actual behaviour, they are a contributing factor. Further research examining the importance of any recency effects would be justified based on these results.

Table 4: Enforcement Experiences and Characteristics of Drivers Who Intend to Change Their Behaviour Appropriately if an Enforcement Location is Known

Variable	Mean for Those Who Changed Behaviour in an Appropriate Direction	Mean for Others	Significance Test Result
Number of times tested at RBT station	2.3	2.6	ns
Weeks since last time tested at RBT station	144.7	90.7	p = .13
Number of times a passenger when driver tested at RBT station	1.2	2.1	p = .03
Weeks since last time a passenger when driver tested a RBT station	107.7	105.8	ns
Number of other people known to be tested at RBT station	8.0	7.0	ns
Weeks since last other person known to be tested at RBT station	35.2	45.3	ns
Number of times breath tested at other than RBT	0.9	0.9	ns
Weeks since last time breath tested at other than RBT	140.6	175.2	ns
Number of times a passenger when driver breath tested at other than RBT	0.5	0.7	ns
Weeks since last time a passenger when driver was breath tested at other than RBT	49.0	75.8	ns
Number of people known to be breath tested at other than RBT	5.3	5.1	ns
Weeks since last time a person was known to be tested away from RBT	35.0	54.7	ns
Weeks since last time required to undergo evidential test	449.9	298.3	ns
Weeks since last time someone else known to require an evidential test	137.7	80.3	ns
Weeks since last someone else known to avoid punishment when over the limit	72.2	125.6	ns
Weeks since last time RBT was conducted nearby	9.5	7.2	p = .18
Number of visits to the hotel each month	11.1	12.3	ns
Age	40.3	37.0	ns
Distance from hotel to home	16.5	31.9	ns

Intentions to Drink-Drive

Respondents were asked about their consumption of alcohol at the hotel prior to the interview and about the amount of time they had been there. They were also asked about their intention to drive home or back to work after leaving the hotel. The alcohol consumption and time data were used to calculate a crude estimate of the relative level of intoxication of respondents.

A respondent was judged to be likely to have a blood alcohol level in excess of the legal maximum:

- if 21 years of age or under (likely to be a probationary licence holder) they had consumed more than one alcoholic drink per hour at the hotel; and
- if older than 21 years of age if they had consumed more than three alcoholic drinks in the first hour and one per hour after that.

This is clearly a crude way to define blood alcohol levels, but given the way in which these data were collected (self-report) and the exploratory purpose of this analysis it was considered that a crude definition would suffice.

Using this definition, 39 respondents in the sample were likely to have a blood alcohol level above the legal maximum. Of these, 30 respondents indicated that it was not their intention to drive home or back to work, and the remaining 9 said that they would be driving. Although the sample is very small, comparisons were made between the 9 drink-drivers and the 30 drinkers who would not be driving. These are shown in Table 5.

The results in Table 5 suggest that:

- Intoxicated drivers who intend to drive home report more experiences of being tested at an RBT station.
- Intoxicated drivers who intend to drive home report a longer time period since the last instances of being a passenger when the driver was tested at an RBT station and knowing someone else who had been tested at an RBT station.
- Intoxicated drivers who intend to drive home lived further from the hotel than other drivers.

The tendency of the "drink-drivers" in this sample to report longer time periods since their last experiences of others being tested at RBT stations is consistent with the need for increased perceptions of the risk of detection to deter drinkers from driving, and is consistent with the suggestion above that recency effects may be important.

The tendency for these drink-drivers to have more experiences of RBT operations is unexpected however. It may reflect the greater exposure of this group to RBT operations through their higher level of road use (they live further from the town and are likely to drive greater distances) or it may reflect the confidence that this group has that they can avoid RBT operations having had personal experience of them before. This possibility was noted above as a potential sense of mastery over the situation derived from personal experience of enforcement patterns. The nature of the

relationship between experience of enforcement and drink-driving behaviour needs evaluation with a larger sample.

Table 5: Comparison Between Intoxicated Drivers Who Intend to Drive Home and Those Who Do Not

Variable	Mean for Those Who Intend to Drive	Mean for Those Who Do not Intend to Drive	Significance Test Result
Number of times tested at RBT station	3.3	2.1	p = .04
Weeks since last time tested at RBT station	112.4	83.5	ns
Number of times a passenger when driver tested at RBT station	2.0	2.1	ns
Weeks since last time a passenger when driver tested a RBT station	160.3	117.8	p = .19
Number of other people known to be tested at RBT station	9.5	8.0	ns
Weeks since last other person known to be tested at RBT station	60.2	17.5	p = .003
Number of times breath tested at other than RBT	0.8	0.8	ns
Weeks since last time breath tested at other than RBT	196.0	171.9	ns
Number of times a passenger when driver breath tested at other than RBT	0.5	0.6	ns
Weeks since last time a passenger when driver was breath tested at other than RBT	24.0	82.4	ns
Number of people known to be breath tested at other than RBT	4.9	5.2	ns
Weeks since last time a person was known to be tested away from RBT	95.0	35.9	ns
Weeks since last time required to undergo evidential test	468.0	395.9	ns
Weeks since last time someone else known to require an evidential test	105.7	123.4	ns
Weeks since last someone else known to avoid punishment when over the limit	64.8	116.4	ns
Weeks since last time RBT was conducted nearby	4.1	7.3	ns
Number of visits to the hotel each month	11.6	13.5	ns
Age	36.1	37.4	ns
Distance from hotel to home	53.7	14.5	p = .07

Concerns About Enforcement

Respondents were asked to nominate things that concern them while at the hotel. Multiple responses were allowed and respondents were not prompted to ensure responses were not biased by the researcher. Responses are presented in Figure 3.

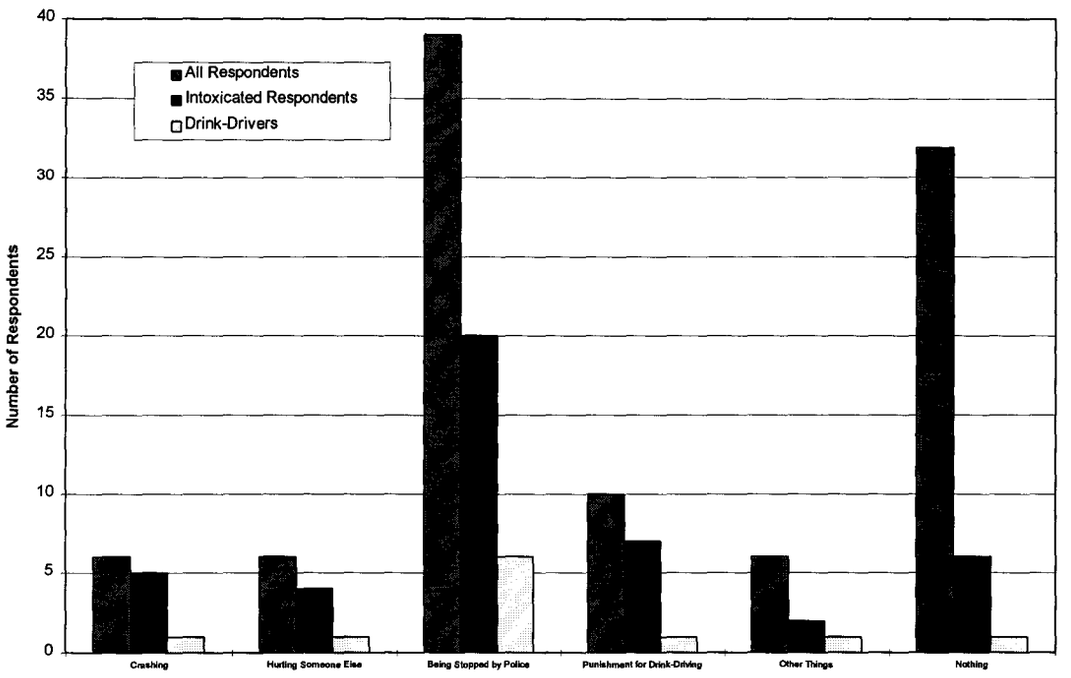

Figure 3: Responses to the Item "What things about driving home worry you after you've been at the pub?"

The most common responses among all respondents were worrying about being stopped by the Police (49.4% of respondents) and worrying about nothing (40.5% of respondents). 64.5% of respondents who met the criteria outlined above for being likely to be above the legal maximum blood alcohol level were concerned about being stopped by the Police, and of these respondents who also intended to drive home, 75.0% expressed a concern about being stopped by the Police.

Clearly there is concern amongst drink drivers about the possibility of being stopped, although the level of concern about the punishment-related consequences of drink-driving were mentioned only rarely (12.7% of all respondents and only 1 of the drink-drivers). The extent to which this concern can be modulated by enforcement activity and publicity needs to be examined, and some data in the present study is relevant to this issue.

Table 6 shows the results of comparisons between those respondents who said they worried about being stopped by the Police and the rest of the respondents. 39

respondents indicated that they worried about being stopped by the Police. They differed significantly from other respondents in the following ways:

- They had been tested more often at RBT stations but less often away from RBT stations;
- They had been a passenger when the driver was tested at an RBT station more often than other respondents, although this had happened more weeks ago than was the case for the other respondents;
- They were younger than other respondents; and
- They indicated that a longer period had elapsed since they had known of someone who had been required to undergo an evidential breath test.

The general pattern of results suggested that worrying about being stopped was associated with higher amounts of experience with RBT and lower amounts of experience with other types of breath testing. There was less consistency, however, in responses to the recency items. These results are not unexpected. Drink-drivers normally regard themselves as careful and are likely to drive more carefully (Smith & Maisey, 1994) to reduce their chance of detection by mobile Police patrols. They are, however, susceptible to detection by RBT. Experience with RBT, therefore, would be expected to increase their level of concern about being stopped.

Table 6: Comparison Between Drivers Who Worry About Being Stopped by the Police and Other Drivers.

Variable	Mean for Those Worry About Being Stopped	Mean for Those Who Do not Worry About This	Significance Test Result
Number of times tested at RBT station	3.0	2.1	p = .06
Weeks since last time tested at RBT station	98.8	126.1	ns
Number of times a passenger when driver tested at RBT station	2.4	1.3	p = .003
Weeks since last time a passenger when driver tested a RBT station	106.5	106.4	ns
Number of other people known to be tested at RBT station	7.6	7.3	ns
Weeks since last other person known to be tested at RBT station	34.0	48.2	ns
Number of times breath tested at other than RBT	0.6	1.1	p = .15
Weeks since last time breath tested at other than RBT	126.3	178.6	ns
Number of times a passenger when driver breath tested at other than RBT	0.8	0.4	ns
Weeks since last time a passenger when driver was breath tested at other than RBT	83.5	50.3	p = .10
Number of people known to be breath tested at other than RBT	3.6	6.3	ns
Weeks since last time a person was known to be tested away from RBT	49.1	44.6	ns
Weeks since last time required to undergo evidential test	401.1	341.4	ns
Weeks since last time someone else known to require an evidential test	132.9	72.1	p = .02
Weeks since last someone else known to avoid punishment when over the limit	96.8	116.7	ns
Weeks since last time RBT was conducted nearby	6.6	9.0	ns
Number of visits to the hotel each month	9.9	13.1	ns
Age	34.0	41.6	p = .02
Distance from hotel to home	28.9	23.1	ns

GENERAL DISCUSSION

Drink-drive enforcement in Victoria was focused on urban areas until a general increase in rural RBT in 1992 and again in 1994. The increasing emphasis on RBT and other forms of drink-drive enforcement in rural areas has not met with the level of success that might have been expected given the success of intensive enforcement programs in urban areas in Victoria, and in New South Wales and Tasmania (Homel, 1988; Newstead et al., 1995).

The intention of this report was to detail the results of a small survey of rural hotel patrons which were hoped to have some bearing on the direction for future research in the rural drink-drive enforcement area. The analysis of the survey results was largely speculative, using liberal statistical techniques and a general analysis of result patterns regardless of the level of statistical reliability.

This discussion is concerned with two outcomes of this analysis. In the first instance discussion centres on the results of the analysis of the survey and what they might imply about the impact of rural drink-drive enforcement. The second aspect of the discussion deals with the implications of this analysis for further research into the rural enforcement area.

Drink-Drive Enforcement in Rural Areas

The survey results in general support the effect of drink-drive enforcement in rural areas. Out of 39 hotel patrons judged to be over the legal maximum blood alcohol level, 30 (76.9%) indicated that they did not intend to drive home or back to work after leaving the hotel. While this result may be due (in part) to the likely tendency of participants to give socially desirable responses to survey items, it suggests that a majority of potential drink-drivers are unlikely to drive. The association between the choice not to drink-drive and the experience of drink-drive enforcement suggests that this experience may have a role in influencing drivers' behavioural intentions.

It is of some concern, however, that at least 14% of hotel patrons in rural areas may drive after leaving the hotel when impaired by alcohol. That these drivers continue to offend and expose themselves to crash-risk suggests that there is a need to tailor either the enforcement program or the supporting educational program to increase the impact for this sub-group of drivers who so far have been largely unaffected. The possibility that there may be a particular groups of drivers who drink and drive has been addressed in a large number of studies (e.g. Donovan & Marlatt, 1982; Donovan, Umlauf, & Salzberg, 1990; McCord, 1984). The conclusion of these studies has been, in general, that there are some drivers with particular personality and behavioural characteristics who are more likely to drink-drive than other drivers. Developing enforcement and public education campaigns that target these groups is a major road safety challenge.

The results generally suggest an important effect of recency of participation in drink-drive enforcement. The more recent the exposure to enforcement, the stronger the apparent effect on behavioural intentions. This is an important result. Recency

implies a level of enforcement frequency that may need to be maintained on an area-by-area basis to ensure that the enforcement program has the desired impact. An implication of this is that the Victoria Police may need to develop a geographical-area approach to enforcement deployment in the drink-drive area. Enforcement patterns that maximise the regularity of enforcement in all rural areas of Victoria may have a greater impact than enforcement programs that deploy enforcement in a way that matches population distributions or operational convenience. While this is an area that may be best served with further research, it does seem to follow from the results of the hotel surveys where more-recent experience of enforcement was associated with more-desirable behavioural intentions.

There is an apparent need to develop countermeasures that target rural residents who live away from towns. The 14.9% of alcohol-impaired respondents who intended to drive after leaving the hotel lived an average of 53.7 km from the hotel, compared to other alcohol-impaired respondents who lived only 14.5 km from the hotel. Those respondents who did not intend to change their behaviour in an appropriate manner in road safety terms also lived further from the hotel than did respondents who would change their behaviour in the presence of enforcement. These results imply that drink-driving may be a more substantial problem with those hotel patrons who have the furthest to drive (and therefore the greatest exposure to crash risk). It may be useful to develop educational and enforcement programs targeting these road users in particular.

Uncertainty was another factor that may have affected the behavioural intentions of respondents. It was suggested that experience with RBT was a more-powerful predictor of safe behaviour than experience with other forms of drink-drive enforcement. These other forms of enforcement are most likely to comprise mobile patrols breath testing drivers they have targeted as potential drink-drivers, or breath testing drivers they have stopped for another offence. This type of enforcement, or knowledge of others' experience of this type of enforcement, was not as strongly associated with safe behavioural intentions as was experience with or knowledge of RBT operations. The most likely explanation for this is that RBT operations (by their nature) are usually unpredictable in location and time and (perhaps more importantly) indiscriminate in their operations. Drink-drivers may be able to avoid being stopped by a mobile patrol by driving more carefully, but if RBT operations are present there is an increased risk of detection that can only be reduced by avoiding the RBT location. There is support here, therefore, for continuing focus on the operation of RBT stations in rural areas.

The issue of drivers avoiding enforcement locations is an important one for effective drink-drive enforcement. It is clear that a significant percentage of hotel patrons will, if given the opportunity, take routes to avoid possible RBT operations. By doing this there is a chance that they increase their crash risk. Enforcement programs and supporting publicity could target this aspect of drink-driving behaviour.

The speculative nature of the data analysis presented in this report should not be ignored, however. While the data do support these conclusions and suggestions, there is a strong need for substantial research in this area before enforcement programs are developed and implemented.

Directions for Future Research

The strength of the speculative approach taken in this study is the possibility of setting directions for future research in the area of drink-drive enforcement. It is appropriate to see the small survey of hotel patrons reported here as a pilot study which may be used to guide both the topics and the methods of further research in this area.

The need for further research is clear. The assumption that drink-driving behaviour and the effects of enforcement would be similar in rural and urban areas is clearly untenable - both for theoretical and empirical reasons.

Theoretically, the context in which behaviour occurs is a strong determinant of the behaviour, and the rural context is different to the urban in many ways. Deterrence theory has largely ignored this difference. Empirically, the ambivalent results of the country RBT program during 1993-1994 and the implications of some of the findings here lead to a clear conclusion that there is a need to consider the effects of drink-drive enforcement in rural areas differently.

The survey of hotel patrons suggests a number of potential research projects. These could be conducted as part of a large project using a range of methodologies or as a series of smaller projects forming part of an overall research program in this area. The flexibility of a multi-component research program is attractive, but there would be a need to develop a research strategy for the area before proceeding. Research concerning drink-drive enforcement in Victoria has been conducted largely on an ad-hoc basis without the benefit of an over-riding structure providing the direction needed for the development of new countermeasures.

The development of an overall research strategy for the rural drink-driving problem could effectively commence with a more rigorous application of the survey methodology discussed in this report. The small sample size and the sample selection technique used here do not allow strong conclusions to be drawn about the nature of drink-driving in rural areas, and this may be an appropriate first step.

Topics that would be appropriate for future research, based on the data reported here, are listed below.

Uncertainty, Recency, and Geography in Rural Drink-Drive Enforcement

The results discussed above point to a role for the recency of enforcement experiences and the uncertainty of enforcement that may be associated with random breath testing in particular. The potential for these aspects of enforcement to be used to enhance the effect in rural areas needs to be investigated.

If the recency of enforcement experiences is found to be a key factor in drink-drive decisions, it may be possible to develop enforcement deployment strategies that maximise the frequency of enforcement in discrete areas of the State. An enforcement program of this type might emphasise regular, brief enforcement activities in a large number of towns. An evaluation of an experimental program based on this high-frequency approach would be a potentially-useful project.

The uncertainty of an enforcement presence may be an important factor in the deterrence of drink-driving. If this is shown to be the case with further research using survey methodologies, it may be useful to trial an enforcement program that seeks to increase the level of uncertainty about enforcement activities.

A deployment strategy similar to that used successfully by Leggett (1988) for speed enforcement could be applied to drink-drive enforcement to maximise the uncertainty of highly-visible drink-drive enforcement on a town-by-town basis. This would be an innovative approach to drink-drive enforcement and an evaluation of an experimental program based on this technique may prove worthwhile.

It should also be noted that the Leggett technique is based on geographical partitioning of the enforcement area and so would provide a way to increase the frequency of enforcement on an area by area basis as suggested above.

Drink-Driving Sub-Groups in Rural Areas

The data reported here and data from other sources suggest that there are some drivers who, for various psychological, social, or cultural reasons are more likely to drive while intoxicated than are other drivers. The identification of sub-groups of the road-user population who are potential drink-drivers would assist in the development and targeting of both enforcement and educational countermeasures.

The hotel surveys suggest that people who live longer distances from the hotel are more likely to drive when intoxicated. This is not surprising, given the unavailability of public transport in rural areas and the distances involved, but it does present a potentially significant road safety problem as the exposure of this group while intoxicated would be substantial. The small sample used here did not allow any further analysis of the characteristics of drivers who live long distances from the hotel, so there is a need to collect more data if it is thought that this sub-group is an appropriate target for countermeasure targeting. The initial survey suggested above as a starting point for more intense research in this area could be used to collect data from these drivers.

Drivers who would choose to drive home and avoid the location of an RBT station are another sub-group that might be targeted in future. The data collected here did not allow any conclusions to be drawn about the reasoning behind the decision to avoid or the way in which this decision affects driving routes and safety. These are issues that need to be addressed before countermeasures can be developed.

This is particularly important in the case of behaviours that have a positive outcome in most instances. Using route changes to avoid detection would be positively reinforced by the reduced risk of detection, but would also have the effect of increasing the sense of personal control over the risk of detection. Drivers who avoid detection are most likely drivers who believe they can reduce their own risk of detection. This group may then drink-drive more often, and so have an increased risk of crash involvement.

Should further research indicate that this is the case, countermeasures targeting this group would need to focus on the personal control and uncertainty issues for these

drivers, increasing the sense that the risk of being stopped is not easily influenced by driver behaviour.

The possibility that there may be sub-groups of the driver population who drive while intoxicated is well accepted in the literature, but there is a real need to investigate the nature of these sub-groups in the rural driving population.

Social Influences in Rural Areas

The possibility that the nature of the rural social context may influence both drink-driving and the effectiveness of drink-drive enforcement programs was discussed earlier. This is another area that could benefit from further research as it may be possible to use the social cohesion of rural communities to reduce the level of drink-driving and to increase the effectiveness of enforcement and education programs.

A research project in this area might use a survey or focus group methodology and collect data concerning the way in which social factors interact with attitudes to drink-driving and behavioural responses to drink-drive enforcement. These interactions could then be used as part of the development and targeting of countermeasures.

One characteristic of the current approach to drink-drive countermeasures is that it may act in opposition to the social cohesion of rural areas. The focus on detection and punishment of offenders, in a social context in which the offending behaviour may not be as unacceptable as it seems to be in the metropolitan area, would be expected to create an "us-and-them" attitude. This attitude would not be conducive to maximising the impact of drink-drive countermeasures. The relationship between the social context and drink-driving countermeasures is an area that could profitably be the focus of future research, with the aim of this research being the development or fine-tuning of countermeasures to suit the rural environment.

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APPENDIX A: SURVEY QUESTIONNAIRE

MONASH UNIVERSITY ACCIDENT RESEARCH CENTRE

SURVEY OF ATTITUDES TO BREATH TESTING

Hi. My name is _____ and I'm here from Monash University. I was wondering if you would have 5 minutes to answer a few questions for me about what you think about random breath testing and that sort of thing?

IF NO: Thanks anyway.

IF YES: Before we start I need to tell you that this is all confidential and any time you want to stop you just have to say so. Could I get you just to initial or sign this permission form before we start. It just says that I've told you the survey is confidential and that you agree to take part.

GET PARTICIPANT TO SIGN FORM.

1 What methods do you know about that are used to detect drink-drivers:

Random Breath Testing		Breath Testing drivers at other times	
Breath Testing at accidents		Blood tests after an accident	
.05 laws		Other...	

2 The Police can pull over and breath test any driver at any time with their booze buses and random breath testing.

How many times have you been breath tested with random breath testing - that's with a booze bus or a few Police pulling people off the road?		When was the last time? (Weeks ago...)	
How many times have you been a passenger when the driver has been breath tested with random breath testing?		When was the last time? (Weeks ago...)	
How many people do you know who have been tested with random breath testing?		When was the last time? (Weeks ago...)	
Do you think there is more of this testing around now than there was a couple of years ago?			

3 The Police can test people at other times to, like when they stop you for something else or even just if they want to test you.

How many times have you been breath tested like this?		When was the last time? (Weeks ago...)	
How many times have you been a passenger when the driver has been breath tested like this?		When was the last time? (Weeks ago...)	
How many people do you know who have been tested like this?		When was the last time? (Weeks ago...)	

4 If you get breath tested and you are over the legal limit, the Police officer has to take you for another test using a more accurate breath tester.

Have you ever had to go for another test because the first one said you were over the limit?		How long ago? (Weeks ago...)	
Do you know anyone else who has had this happen to them?		When was the last time? (Weeks ago...)	
Do you know anyone who has been a bit over the limit when they've been breath tested but then they've been let off by the Police officer?		How long ago? (Weeks ago...)	

5 Do you know where the Police have to take you for the second test if the first one says you are over the limit?

The local station		Another station	
The hospital or a doctor's		Into a booze bus	
They've got the other one in the car		Other...	

6 Sometimes the Police have special breath testing operations with booze buses and extra police.

When was the last time they had a booze bus around here? (Weeks...)		
Did you know about it at the time or only afterwards?		
How did you find out?	Got tested / Drove past it Friend told me afterwards Found out before hand Found out at the time it was on Other	
If you found out about the breath testing at the time or before hand, how did you find out?		
Would you tell your friends if you were stopped on the way home?		

7 If you found out about a booze bus before-hand, or if you were at the pub and someone said there was a booze bus at a particular spot - what would you do? (ALLOW MULTIPLE ANSWERS)

Watch my drinking/not drink as much		Try and get someone to drive me home	
Drive home another way		Stay in town / walk home	
Drink coffee / eat while drinking		Other...	

8 About coming to the pub:

How often do you get to the pub? (Number of times each month)	
What sort of drink do you normally have?	
How much would you normally drink?	
How do you normally get here and go home?	
Do you think you come to the pub the same amount as a couple of years ago? If it's changed..... why?	
Where else have you had a drink in the last week?	

9 Do you drink the same amount as you did a couple of years ago?

If it's changed, why?

More enforcement / less enforcement		I got caught drink-driving so I'm careful	
Friend(s) have been caught		Money	
Psychological / employment factors		Other...	

10 What things about driving home worry you after you've been at the pub?

Having a crash		Getting stopped by the Police	
Hurting someone else		Being fined / losing licence (punishment)	
Getting home late		Other...	

11 The Police are planning to increase the amount of breath testing they do outside Melbourne. What will you do to make sure you don't get caught.

Watch my drinking/not drink as much		Try and get someone to drive me home	
Try to avoid them		Stay in town / walk home	
Drink coffee / eat while drinking		Other...	

12 Now a few last questions about you...

What sort of work do you do?	
How old are you?	
Sex	
How much school did you finish (code years of secondary, 7=uni/coll)	
Do you have a driver's licence a the moment?	
How far from here do you live?	
How long have you lived here?	
How much do you reckon you've drunk today/tonight?	
How long have you been at the pub?	
Do you think you'll drive home / back to work?	

We're finished!

Thankyou very much for your help! This is the first time we've asked about breath testing up here - what do you think of it anyway?

STAWELL HORSHAM NAGAMBIE WANGARATTA