# The Impact of Random Breath Testing in New South Wales

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# Preface

Following the introduction of random breath testing (RBT) in New South Wales on 17 December 1982, the Bureau of Crime Statistics and Research and the Traffic Accident Research Unit of the Traffic Authority were directed to monitor the effectiveness and the efficiency of implementation.

The evaluation programme was divided between the two research agencies, with the Bureau concentrating on drink-driving charges, police operations, public attitudes and a number of economic effects.

This report is the final report by the Bureau of Crime Statistics and Research, the last in its series of six reports on the evaluation of random breath testing in New South Wales. This report presents a summary of a number of sources of data and information relevant to the evaluation of the effects of random breath testing on the community. These range from statistics on people appearing before the courts on drink-driving charges to data on alcohol sales and survey data on community reactions to the implementation of random breath testing. Some of these data have been presented in earlier reports in the series (e.g., police operation of random breath testing and community surveys) but in this report, these data have been brought together with other data not previously presented (e.g., court statistics, alcohol sales) to provide an overall picture of the effects of random breath testing. On the basis of that evidence, we may conclude that random breath testing, as implemented in New South Wales, has had a significant impact on the road toll, on the number of persons appearing before courts on drink-driving charges, and on community attitudes and drink-driving behaviour.

A.J. Sutton,
Director

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# Summary

Random breath testing was introduced in New South Wales on 17 December 1982. The means and the effects of its implementation are summarised as follows:

- **Level of enforcement**

  The intensity of enforcement was unprecedented in Australia — nearly 900,000 tests in 1983 and 1.3 million tests in 1984. In Sydney, the average number of police-hours per week was over 800, the level necessary, according to several estimates, for a significant impact (Cameron, Strang & Vulcan, 1980; RACV, 1984).

- **Advertising campaign and press coverage**

  The high level of enforcement was supported by extensive publicity, including a government-funded advertising campaign beginning in December 1982 and concentrating on the peak holiday periods of Christmas/New Year and Easter (estimated cost over two years of $2.72 million). Considerable publicity of the issues of drink-driving, road safety and random breath testing was provided by news coverage of these issues, with heavier coverage in the early months, averaging out overall to over one article per day in the major metropolitan papers. Most of the evaluative comment has been positive or neutral, with the impact on the road toll a major subject.

- **Public awareness and support of random breath testing**

  As a result of the intense, visible means of enforcement and the extensive publicity, community awareness of random breath testing was high. Agreement with random breath testing also increased from 66% in March 1979 pre-random breath testing levels to 90% agreement in March 1983 and March 1984.

- **Direct and indirect exposure to random breath testing**

  New South Wales achieved a higher rate of direct exposure to random breath testing (based on survey findings of the number of people reporting being tested) in a few months than was achieved in other states in several years. By March 1984, nearly 30% of drinking motorists reported having been tested (Cashmore & Vignes, 1984). Several months after the introduction of random breath testing, about 50% of people surveyed knew someone who had been tested; by March 1984, a year later, this figure was 65%. Homel (1985) found that there was a strong relationship between knowing others who had been tested (indirect exposure) and the perceived likelihood of arrest. One of the ways in which random breath testing is believed to have its impact is by increasing the perceived likelihood of apprehension for those who drink and drive.

- **Reported changes in attitudes and behaviour**

  There was some evidence of an increase in the perceived likelihood of being caught after the introduction of random breath testing. Although there was some suggestion of a "wearing off" in this effect, there is no evidence of "wearing off" in reported changes in behaviour. In fact, there is some indication of an increase from 1983 to 1984 in the number of people reporting changes. The most common change was to limit the number of drinks when driving. The groups most needing to change (men, younger people and heavy (beer) drinkers) were most likely to have changed, but a significant number in these groups still reported drinking and then driving when they believed they were "over the limit" after the introduction of random breath testing. One change in particular, getting someone else to drive, suggests a reduction in peer pressure to drink and then drive to prove one's competence as a drinker.

- **Number of apprehended drink-drive offenders**

  In 1983, 5,348 people were charged with drink-driving offences as a result of being tested at random breath testing stations; in 1984, the figure was 5,096. The overall charge rate fell from 1983 to 1984; despite more tests being conducted, fewer charges were laid. There was also a sharp drop in the total number of court appearances for drink-drive offences — the 1983 figure was about 30% down on the 1982 pre-random breath testing figure. This fall cannot be accounted for simply by a shift in resources from a "high catch" "non-random" means of detection to the "low catch" "random" method.

- **"Type" of apprehended offender**

  "Randomly" detected offenders appear to be more representative of the driving population than those detected by "non-random" means — they include more women and tend to be older.

- **Effect on road toll**

  Most importantly, there has been a marked reduction in the number of people killed and injured in road accidents. Although an economic downturn which was most severe during the first year of random breath testing makes it difficult to determine the net effect of random breath testing, the fall in the proportion of fatally injured drivers with illegal blood alcohol concentration (BAC) is strong confirmatory evidence of its impact.

- **Evidence of waning effect**

  The number of people killed and injured on New South Wales' roads increased slightly from the 1983 figures, which may suggest some weakening of the effect. However, the 1984 figures were still significantly less than pre-random breath testing figures and the proportion of drivers who were killed and injured with illegal BACs fell further from 1983 to 1984, suggesting a continuing deterrent effect. The charge rates for random breath testing operations fell from 1983 to 1984, but this may indicate either a real fall in the incidence of drink-driving or increasingly successful avoidance behaviour.

- **Cost/benefit analysis**

  The estimated savings to the community associated with the reduced road toll were well in excess of and appear to have warranted the costs associated with the implementation of random breath testing.

# CHAPTER 1

# Random Breath Testing Legislation

*Random breath testing defined*

When random breath testing was introduced in New South Wales, the major change for drivers was that they could be required to undergo a breath test without, as previously, having come to the attention of police by being involved in an accident or by committing a four-point traffic offence. Amendments to the Motor Traffic Act, effective from 17 December 1982, give police the power to require a driver to undergo a breath test if the police officer "has reasonable cause to believe that the person is or was driving a motor vehicle".

The term "random breath testing" refers to the operation of breath testing units which set up by the roadside and select drivers for breath testing from the stream of traffic passing the site. Random breath testing is, however, truly random only to the extent that this selection procedure is random. Neither the timing nor location of random breath testing units is random; in particular, the location is determined by factors such as the volume of traffic flow, the availability of a safe "stopping place" for vehicles, and sufficient distance from hotels and clubs. Since the main aim of random breath testing is to deter drink-drivers, random breath testing stations are generally highly visible. They are well lit at night, both for visibility and safety, with display signs advertising their role. In the Sydney metropolitan area, a number of units work from buses, commonly called "booze buses"; in the first year or so, these buses were converted government buses but these have gradually been replaced by specially designed smaller buses or vans. These vans are also used in Newcastle and Wollongong. In the country, however, and also in some metropolitan operations, police cars are used. Cars are also used as support vehicles for bus-based operations in the metropolitan area and to pursue avoiding motorists.

The common procedure when a driver is stopped at a random breath testing site is for one of the police officers to ask the driver to undergo a breath test, using either an Alcometer or the Alcotest "bag". The driver is also required to produce his/her driver's licence, and details of the driver's age and sex and car registration plate are recorded, together with the result of the test. Drivers who pass the test are detained no further, but if the results of the test indicate a blood alcohol concentration (BAC) equal to or greater than .05 grams of alcohol per 100 millilitres of blood, the driver is under arrest for the purposes of breath analysis. Breath analysis is conducted by a member of the Breath Analysis Squad, located at the site or at the nearest police station. In either case, it must take place at least 15 minutes after the initial test and within two hours of the initial breath test. If breath analysis yields a reading of less than .05, the driver is free to go. If, however, the reading is equal to or greater than .05, the driver is charged with the offence of driving with the prescribed concentration of alcohol (PCA). Following the arrest and charge procedure, most people charged with a drink-driving offence are either granted bail or allowed at large (bail dispensed with), on the undertaking that they will appear at court to answer the charge(s). Motorists with illegal BAC are allowed

to drive from the random breath test site or from the police station only when their BAC falls below .05. The vehicle is secured by police until arrangements have been made to have the car removed by the driver (if able) or by family or friends.

Since the introduction of random breath testing in New South Wales, nearly two and a quarter million people have undertaken the initial breath test; of these tests, 13,880 proved positive, rendering those drivers subject to breath analysis; 10,570 people were subsequently charged with a PCA offence, representing some 0.05% of those breath tested. A detailed analysis of the operation and outcome of random breath testing (in terms of the number of tests and charges, and the location and timing of operations) is presented in Chapter 3.

*Other legislative changes related to drink-driving in 1982*

Although random breath testing was and still is the best known drink-drive countermeasure, it was in fact only one of a package of measures introduced in December 1982. Also included in the package were three major changes:

(1) The introduction of a three-tier system of penalties to replace the two-tier system;
(2) An increase in penalties;
(3) Compulsory blood testing (for alcohol concentration) of drivers, motor cyclists and pedestrians, aged 15 years and over, admitted to hospital following road accidents.

The 1982 legislation provided for three levels of PCA offence, defined as driving or attempting to drive a motor vehicle with the following prescribed concentrations of alcohol:

(1) Low range PCA — .05–.079 grams of alcohol in 100 mls of blood.
(2) Medium range PCA — .08–.149 grams of alcohol in 100 mls of blood.
(3) High range PCA — .15 grams or more of alcohol in 100 mls of blood.

The penalties associated with these three offences are summarised in Appendix I, together with the penalties for refusing a breath test, refusing breath analysis and for two other related drink-drive offences (failing to comply with a signal to stop at a random breath testing station, and wilfully altering one's blood alcohol concentration).

The main aim of the introduction of compulsory blood-testing for road-accident victims was to extend the possibility of detection of drink-drive offenders to injured drivers who previously avoided detection. This legislation created several new offences associated with failure to obtain blood samples. These offences include preventing a medical practitioner from taking a blood sample from another person or from oneself. Medical practitioners may also be charged with failing to take a blood sample, failing to follow correct procedures after taking a blood sample and for failing to submit a blood sample for analysis. Details of the penalties associated with these offences are listed in Appendix II.

In summary, the anti-drink-drive measures now in force are more comprehensive and the penalties for offending tougher than they have ever been in New South Wales. In some ways, the introduction of other measures (tougher penalties and compulsory blood testing of road accident victims) at the same time as random breath testing makes the evaluation of random breath testing *per se* more difficult than if it had been introduced alone. To some extent, any effects attributed to random breath testing must be shared among the other measures. However, random breath testing was by far the best known of the package of measures and

the only one given media coverage in both the publicity campaign and in news stories reporting on the legislation. To put these changes into context, the next three sections describe the history of drink-drive legislation in New South Wales and the measures, including random breath testing, used in the other states of Australia, and in other countries.

*Previous measures relating to drink-driving in New South Wales*

The first move by the New South Wales government against drink-driving was the introduction of a legal blood alcohol limit of .08 grams per 100 millilitres of blood. This legislation came into effect on 16 December 1968, 14 years (almost to the day) before the introduction of random breath testing and the associated package of measures. In this 14-year period, there were a number of other legislative changes affecting both police activity and penalties for drink-driving. These include:

- An increase in the maximum fine for driving with the prescribed concentration of alcohol (PCA) from $400 to $1,000 (December 1978);
- The introduction of a minimum disqualification period of three months for a first offender (December 1979);
- A direction that police breath test any driver involved in a crash or who had committed a four-point traffic offence (July 1980);
- A reduction in the legal blood alcohol limit from .08 to .05 (December 1980).

The simultaneous introduction of random breath testing, compulsory blood testing of road-accident victims, and increased penalties in December 1982 is therefore the most recent of a series of measures taken by the New South Wales government against drink-driving.

*Measures relating to drink-driving in other states[1] of Australia*

Since a number of the measures used to evaluate the effectiveness of random breath testing involve comparisons between New South Wales and other states, it is important to outline the anti-drink-driving measures used in the other states and the dates of their introduction. An updated summary of the dates of commencement of major legislative changes affecting drink-driving, compiled by the National Roads and Motorists Association in New South Wales (NRMA), is shown in Table 1.1.

The first state to introduce a statutory blood alcohol limit was Western Australia, although the .15 level which was by itself prima facie evidence of incapacity to drive a motor vehicle was very high. This is the level which now renders New South Wales' drivers liable to the most severe penalties for a PCA offence. The first state to introduce the .05 limit was Victoria (in 1966). New South Wales, Queensland and Tasmania have since followed Victoria's lead, but the other states and territories of Australia still have a limit of .08.

Compulsory blood testing was generally introduced earlier than random breath testing, although the beginning of the two measures was simultaneous in the Northern Territory and New South Wales. Western Australia, Tasmania and the Australian Capital Territory still have no legislation for compulsory blood-testing.

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1. The term "state" here also includes the two territories — the Australian Capital Territory and the Northern Territory.

**Table 1.1 Dates of commencement of drink-drive measures by state**

| | Legal blood alcohol limit | Random breath testing | Compulsory blood testing |
|---|---|---|---|
| New South Wales | • 16 December 1968 — .08<br>• 15 December 1980 — .05<br>• April 1985 — .02 for probationary drivers | 17 December 1982 | 17 December 1982 |
| Victoria | • Dec 1966 — .05<br>• June 1984 — zero for probationary drivers | 1 July 1976 | 8 April 1974 |
| Queensland | • 6 July 1968 — .10<br>• 24 April 1974 — .08<br>• October 1982 — .05<br>• March 1985 — .02 for probationary drivers | No legislation | 1 September 1974 (passed but not proclaimed) |
| South Australia | • 23 November 1967 — .08<br>• 18 June 1981 — .05 for probationary licences and learner's permits | 14 October 1981 (currently under review) | 1 July 1973 |
| Western Australia | • 7 December 1975 — .15*<br>• 13 November 1968 — .08<br>• August 1982 — .02 for probationary drivers | No legislation | No legislation |
| Tasmania | • 20 July 1966 — .08<br>• 1 February 1971 — zero for first-year drivers<br>• 5 January 1983 — .05 | 1 January 1983 | No legislation |
| Australian Capital Territory | • 1971 — .08 | 17 December 1982 | No legislation |
| Northern Territory | • 2 December 1974 — .08 | 1 February 1980 | 1 February 1980 |

* Other evidence required if BAC exceeded .05, but was less than .16.

Victoria was the first state to introduce random breath testing and its assumed success was an important factor influencing other states to follow suit. Queensland and Western Australia are currently the only two states without legislation. The presence or absence of legislation does not, however, provide a good basis for comparison across states since the level of enforcement has varied markedly across states (see Appendix III) and at least one state without the relevant legislation (Western Australia) has conducted de facto random breath testing at roadblocks set up in Christmas drink-driving blitzes. The most intensive operation of random breath testing has been in New South Wales, where nearly 900,000 tests were conducted in the first year. This compares with 18,342 tests in Victoria's first year of operation and about 80,000 in South Australia. In fact, it is likely that the operation of random breath testing in New South Wales has been more intense than anywhere else in the world. (Chapter 3 is concerned with the details of the level of operation.)

*Anti-drink-driving measures outside Australia*

The introduction in Australia of legislative changes to deter drink-driving followed earlier similar measures overseas and the consequent claims for their success. (The strength of these claims has been somewhat disputed by Ross (1975,1982).) Norway (1936) and Sweden (1941) were the first countries to introduce a statutory blood alcohol limit, creating the "Scandinavian model" of *per se* legislation. The novel feature of this type of legislation is that a driver's blood alcohol concentration is by itself evidence of alcohol intoxication; no other evidence is necessary to prove legal incapacity to drive. The evidentiary status of the blood alcohol reading increases the likelihood that a drinking driver, once caught, will be found guilty and incur the associated penalties.

Similar legislation, but generally with less severe penalties, followed in other countries, including Australia. In fact, Victoria was first to adopt the Scandinavian-style countermeasures in 1966, closely followed by the United Kingdom in 1967. The dates of introduction of *per se* legislation are listed in Table 1.2 for a number of countries.

Table 1.2 also shows for the same countries the power of police to require a driver to undergo a breath test. The extent of this power varies and takes several levels. The first and the most liberal as far as the driver is concerned is the right of police to breath test only if there are reasonable grounds to suspect that the driver's performance is impaired by alcohol; the common grounds for suspicion are involvement in a crash or traffic violation. The United Kingdom, Canada and New Zealand have legislation along these lines. The second level extends police powers to enable them to stop drivers at a "roadblock" for licence inspection or other checks, including "sobriety checks" (Ross, 1984). Drivers suspected of having consumed alcohol (by smell, for example) are required to take a breath test. This system of "roadblocks" operates in the Netherlands, New Zealand and in a number of states of the United States. The third and most extensive level of police powers with regard to breath testing is defined by *random* breath testing. Legislation allowing random breath testing is in force in France, Denmark, Norway, Finland and Sweden, and in some Australian states (see Table 1.1). Random breath testing differs from "sobriety checkpoints" in that it enables police to breath test any driver without having reason to suspect that they have been drinking. In theory, this increases both the actual and perceived risk of detection for drinking drivers who would otherwise not come to police attention by crash-involvement or by a traffic

**Table 1.2 Drink-drive legislative measures by country**

| Introduction of statutory BAC | | Police powers to breath test | Penalties |
|---|---|---|---|
| Norway | 1936 — .05 | Random roadblocks — police do not have to "show cause" (1981); previously only if suspected alcohol presence at roadblocks for verification of licences etc | Severe — imprisonment for minimum of 3 weeks and minimum licence suspension of one year |
| Sweden | 1941 — .08 (2 tiers, .08, .15 and over); now .05, not .08 | Police able to breath-test without restriction at scheduled roadblocks and in connection with crashes and traffic violations; blood test for evidentiary purposes (1976) | Severe — heavy fines for lesser offence, one month's gaol for more serious offence, and licence revocation for both |
| United Kingdom | 1967 — .08 | Reasonable cause to suspect alcohol intoxication traffic offence, driver in accident; random breath testing legislation was resisted in 1967 and again in 1979 | |
| Canada | 1969 — .08 | Reasonable and probable grounds to believe driver impaired by alcohol | |
| New Zealand | 1969 — .10; now — .05 | Good cause to suspect an offence involving alcohol, driver in accident, alcohol consumed; blood test for evidentiary purposes | |
| France | 1970 — .08 | Random roadblocks allowed (1978); blood test for evidentiary purposes; also compulsory blood tests for certain traffic violations and crash involvement | |
| Netherlands | 1974 — .05 | Roadblocks used, but police can test for alcohol only if suspect alcohol consumption (e.g. smell) | Severe — heavy fines, prison terms of up to 3 months, and licence suspension of up to 5 years |
| Denmark | 1976 — .08 (3 tiers, .08, .12 and .20) | Police able to breath test without restriction; blood test for evidentiary purposes | Graded from fine and licence suspension to a fine, two weeks gaol and 2½ years licence disqualification |
| Finland | 1977 — .05 (2 tiers, .05 and .15) | Police able to breath test without restriction, and in 1977 required to breath test drivers involved in accidents for serious offences; blood test for evidentiary purposes | Licence suspension, also fine if over .15 and possibly gaol |

violation. Random breath testing (and the other forms of breath testing to a lesser extent) increases a drink-driver's risk of being detected, and the statutory blood alcohol limit increases the chances of being found guilty once caught.

The success of these measures in deterring drinking drivers has been evaluated by Ross (1975, 1982, 1984). In his review of the literature, Ross concentrated on studies based on interrupted time-series analysis of crash data. Crash statistics were selected as the main outcome criterion for evaluation because the major objective of drink-drive counter measures is to reduce the incidence of alcohol-involved crashes. Ross's review also focused exclusively on what he called "simple deterrence" — "the short-term component of general deterrence". Simple deterrence refers to the "short-term mechanism in which people react through fear" of threatened punishment. In contrast, the long-term component of general deterrence refers to the "mechanism in which habit formation and moral education follow from exposure of the population over time to the short-term threat" (Ross, 1982, p.8).

In reviewing the range of drink-driving countermeasures implemented in a number of countries, Ross (1982) concluded that such countermeasures can have a significant *short-term* deterrent effect on drink-driving. According to Ross, the three main factors influencing the deterrent effectiveness of the countermeasures are the level of publicity associated with the campaign, the level of enforcement, and the influence of the combined publicity and enforcement on the actual and perceived certainty of the threatened punishment. For example, he states:

> Considerable evidence shows the positive effect of increments in perceived certainty of punishment due to the introduction of Scandinavian-type laws and as a consequence of enforcement campaigns. Publicized and news-worthy interventions designed to increase the actual probabilities of punishment for drinking and driving seem almost always to be accompanied by corresponding declines in the variables indicating this behaviour (Ross, 1982, p.105).

However, the deterrent effect is short-lived. Ross (1982) explains the evanescent nature of the effect as a result of the *initial* overestimation by the public of the risk of apprehension, with the effect waning as the public re-evaluates the risk. As Ross also points out, some of the countermeasures were intended only as short-term blitzes and others were not implemented with vigorous enforcement. In either case, the effect might be expected to be only short-term.

### *Model for the evaluation of random breath testing*

The relevance of Ross's findings to the present evaluation of random breath testing requires qualification on several points. First, random breath testing in New South Wales was not introduced as a short-term blitz. It was intended as a long-term measure and has been vigorously enforced and highly publicised.

Second, Ross's conclusions apply to the range of drink-driving countermeasures and not specifically to random breath testing. In fact, Ross (1982, 1984) is optimistic about the possible effectiveness of "roadblock testing" and suggests that it is "perhaps the most promising innovation . . . to introduce some convincing threat of probable apprehension for the driver who believes (usually correctly) that he can drink and drive without giving cause for police to suspect him of the violation" (p.110).

Third, as Ross (1982) points out, his review was concerned only with the short-term deterrent effect — "simple deterrence" or the "fear aspect". Andenaes (1977, 1978) and Zimring and Hawkins (1977) point to the long-term educative influence

of the law and suggest that stricter laws against drink-driving, for example, may act as a "moral eye-opener". As long as the law is not too much out of step with community attitudes, it may be used as an "instrument of social change", resulting in decreased acceptability of the legally proscribed behaviour. As Snortum (1984) states, "Andenaes does not deny the deterrent influence of the "fear component of law" but believes that the "moral component" is of greater significance for promoting long-term control" (p.142); moral inhibitions are effective even without the fear of punishment. In fact, Ross does not deny the role of "moral education" in the long-term effectiveness of Scandinavian-type laws against drink-driving, but admits to being "persuaded by Andenaes and Snortum that a plausible case can be made" (Ross, 1982, p.69).

How then can we measure the effect and evaluate the effectiveness of random breath testing? Like Snortum (1984), we propose to "widen the methodological net to an eclectic" group of measures which takes account of both short-term deterrent and long-term educative influences and effects. On the input side of the model, deterrence theory and the findings of a number of studies (Ross, 1982; Summers and Harris, 1979) indicate the importance of an intensive and vigorous level of enforcement together with a high level of publicity and media coverage. The first question to be addressed then is: how is/was random breath testing implemented in New South Wales? Chapter 2 outlines the advertising campaign which supported the introduction of random breath testing and reinforced its operation during the key holiday periods of Easter and Christmas of the following years. Chapter 2 also presents a content analysis of press coverage of the general issue of drink-driving and the specific topic of random breath testing over a two-year period for metropolitan newspapers and over a one-year period for country newspapers. The details of the operation of random breath testing by the police are reported in Chapter 3. To anticipate the findings of these chapters, as indicated earlier, random breath testing in New South Wales was enforced by a highly intensive campaign and supported by an extensive advertising campaign and media coverage.

On the output side of the model, the relevant question is: what effects has random breath testing had? Possible effects range from a reduction in the number of crashes, especially alcohol-involved crashes, to a change in drinking habits and consequent effects on the liquor industry. In general, these effects fall into several categories of outcome measures, as Snortum (1984) suggested. The first of these categories, the number of crashes involving injuries and fatalities, is the ultimate criterion for the evaluation of the effectiveness of random breath testing. After all, the main objective of random breath testing, like other drink-driving countermeasures, is the reduction in the road toll by reducing the incidence of drink-driving. Although some consideration is given to crash statistics in this report (Chapter 5) because of their primary importance, a more detailed analysis of these data is the province of the Traffic Accident Research Unit and will be reported separately by that unit.

The second category of output measures, "crimes", involves official figures on detected drink-drive offenders. Chapter 4 presents an analysis of the number of drink-drivers apprehended and convicted both before and after the introduction of random breath testing. Although there is the usual problem of interpreting figures on detected crime because of the "dark figure", the court statistics show a very marked reduction in the number of people charged and convicted for drink-driving offences following the introduction of random breath testing. This result is especially interesting and deserving of comment in view of the vast increase in police resources to drink-driving countermeasures.

The third category of outcome measures is "compliance" and refers to a package of measures of community attitudes and behaviour. It is the opposite side of the coin to "crime" and also includes a "dark figure of compliance" (Snortum, 1984) since as Gibbs (1975) and Homel (1985) explain, it is difficult to measure drink-driving behaviour which has been deterred and replaced by compliant, law-abiding behaviour. Despite the difficulties, Chapter 6 presents the results of a number of community surveys which have tapped community attitudes toward random breath testing and reported changes in behaviour to avoid drink-driving. Community approval of random breath testing is an important factor since, as Snortum (1984) points out, moral agreement with the law is an important pre-condition for deterrence. Another measure of the impact of random breath testing on the community is provided by the level of alcohol sales and alcohol consumption; Chapter 7 presents the available data in this area.

The final chapter, Chapter 8, presents the conclusions and attempts to bring together all the available evidence on the effects of random breath testing and takes account of possible alternative explanations for the effects.

## CHAPTER 2

# The Role of the Media

> Newspapers and television do not merely monitor the events of the real world: they construct representations and accounts of reality which are shaped by the constraints imposed upon them: constraints emanating from the conventions, ideologies, and organization of journalism and news bureaucracies. Ideally we could evaluate the influence of these constraints and the accuracy of media accounts by comparing media depictions with the reality of the events they portray. But, typically, in a highly differentiated society . . . the events which capture the interest of the media only become visible through their eyes. (Chibnall, 1977, p.1).

The mass media have played a significant role in publicising information about drink-driving in general, and random breath testing in particular, both by news stories and by officially sponsored advertising campaigns conducted via their agency. This chapter looks at both aspects, but explores in more detail the content of newspaper articles about random breath testing and drink-driving.

The importance of publicity associated with the enforcement of anti-drink-drive measures has been widely espoused and is supported by the findings of a number of studies (Mercer, 1984, cited by Homel, 1985; Ross, 1982, 1984; Saunders, 1977). Saunders (1977) found no evidence of a reduction in the number or severity of crashes during a period of increased enforcement operations when these operations were given no publicity by the mass media. Similarly, Mercer (1984) in a study cited by Homel (1985) concluded, after a study of an enforcement campaign in British Columbia, that "unless the public knows there is a blitz on, a blitz roadcheck becomes just another roadcheck". Even negative publicity based, for example, on controversial aspects of the enforcement operation may serve a useful purpose, so supporting the axiom that "there is no such thing as bad publicity". Ross (1981) cites as an example the negative publicity surrounding a drink-drive blitz by Cheshire police in 1975. Although there was (and still is) no legislation formally sanctioning random breath testing in Britain, the Cheshire police conducted a blitz which amounted to random breath testing. This blitz had no effect on the number of night-time crashes until protests and complaints about the police operation gained publicity in the media. Ross (1982) concludes:

> The effect seems to be greater in those instances in which the innovation is more controversial, more publicized and more newsworthy. Since the fundamental variables in the deterrence model are perceptual, this finding is theoretically expected, although officials battling what they deem to be an unreasonable opposition often have not seen the benefits of that opposition for achieving their deterrence goals (pp.69-70).

What role does publicity play in deterrence and why does publicity, even negative publicity, enhance enforcement? One explanation focuses on public exposure to the issues, and concerns the educative and moral influence of the media. Every time the issue of drink-driving is discussed in the media, the public is exposed to the issue again, so increasing the likelihood that people will know about the drink-drive laws. Knowledge of the drink-drive laws, a major goal of any campaign against drink-driving, is a pre-condition for deterrence (Snortum, 1984). A number of studies

have reported increased familiarity with the laws and regulations following publicity campaigns (Freedman et al., 1975; Homel, 1985). Homel (1985), for example, found that a number of people surveyed following the introduction of random breath testing in New South Wales believed that the blood alcohol limit had been reduced from .08 to .05 when random breath testing was introduced, although, in fact, it had been reduced two years earlier. But media publicity may, and often does, go beyond the knowledge aspect to the expressed morality of issues, as Chibnall (1977) points out:

> Crime news may serve as the focus for the articulation of shared morality and communal sentiments. A chance not simply to speak *to* the community but to speak *for* the community . . . to advocate a response, to eulogize on conformity to establish norms and values, and to warn of the consequences of deviance (pp.x-xi).

Ross (1982) also suggests another function of publicity — its influence in increasing the perception of the likelihood of apprehension, a concept which is central to the operation of deterrence. The way in which publicity operates in the deterrence model is, however, not simple, as Homel's (1985) findings demonstrate:

- Although recall for advertisements about random breath testing was better for television and newspapers, only recall of radio advertisements significantly predicted an increased perceived risk of "being caught".
- Recall of television advertisements was, however, an important factor in predicting changes in respondents' travel (driving/not driving) behaviour, and newspaper publicity was the only exposure variable which predicted whether a motorist would nominate fear of punishment as his/her reason for not drink-driving.
- Exposure via the media was not as important an influence, however, on the perceived chances of arrest as exposure to random breath testing by *knowing others* who had been tested.

This picture of the role of the media in deterrence is quite complex. The complexity of the relationships may explain why Wilson and Hendtlass (1983) found no direct relationship between the level of news coverage and the perceived risk of detection.

As indicated earlier, publicity concerning drink-driving in general, and random breath testing in particular, may be in the form of paid advertising or in news stories about the issues. The next section deals with the advertising campaigns associated with random breath testing and the following section presents an analysis of the content of newspaper articles concerned with drink-driving and random breath testing.

## ADVERTISING CAMPAIGN

On the basis of findings and arguments about the value of publicity in the operation of anti-drink-drive measures, the Staysafe Parliamentary Joint Standing Committee on Road Safety recommended that random breath testing should be supported by extensive media publicity. This recommendation was accepted by the New South Wales Government and an extensive media campaign was launched with the introduction of random breath testing. This campaign, most intense in December 1982, has covered several phases, each focusing on different aspects of the theme and concentrated in the holiday periods of Christmas-New Year and Easter of each year.

*December 1982*

In the first period of the campaign, beginning on 12 December 1982 (five days before the introduction of random breath testing), the main advertisement was shown on every metropolitan and regional television station and was broadcast on every radio station. The time slots chosen for television screenings were in the peak evening viewing period between 6 p.m. and 10.30 p.m. from Sunday to Wednesday, and on radio in the "drive-time" hours on Wednesdays, Thursdays, Fridays, and weekends. The advertisements emphasised fear of arrest, using the slogan, "How will you go when you sit for the test? Will you be under .05 or under arrest?" The television advertisement showed police breath testing a number of people and followed the arrest procedure for a distressed-looking male offender. There was some criticism, including some from police, that it concentrated too much on the boots, uniforms and sombre faces of the police, making them look too much like the Gestapo. The consequences of "failing the test" and the arrest procedure were spelt out in print advertisements like the two shown in Figures 2.1 and 2.2. These advertisements were run in all four daily metropolitan newspapers, the two Sunday papers, and regional newspapers.

*Easter 1983*

The second media campaign period ran for the four weeks leading up to Easter 1983 and, in this period, the main advertisement was screened at cinemas in Sydney, Wollongong, Newcastle, Gosford and Tamworth. Taxi backs and message strips along the sides of government buses carried the slogan used in radio and television advertisements. Figure 2.3 shows an example of a bill-board advertisement displayed at a railway station. The budget for the first burst over Christmas 1982 was $515,100, and for the second burst in March/April 1983, $256,800.

*Mid-1983*

In June 1983, Sydney radio and newspapers featured a number of advertisements which congratulated Sydney drivers on their contribution to the reduction in the road toll (see Figures 2.4 and 2.5). In country areas where the same improvement in the road toll had not occurred, there was a special repeat of the original random breath testing campaign. The budget for this mid- year campaign was $250,800.

*Christmas 1983 — Easter 1984*

The next phase of the campaign (beginning in Christmas 1983) stressed the likelihood of detection with advertisements, including bill-boards, featuring the slogan, "Every police car now acts as a booze bus". The public was warned that their chance of being tested was 1 in 3, and the advertisements again emphasised the number of people who had been "saved from death or injury" (see Figure 2.6 a & b). Although the campaign was more concentrated over the Christmas period, it was more continuous than in the previous year with advertisements continuing to be used between Christmas and Easter, and indeed until June 1984. Running up to Easter 1984, a modified version of the original advertisement was run with a repeat of the jingle, "How will you go when you sit for the test? . . .". Another television advertisement at this time focused on the difficulty of avoiding random breath testing stations — in a "nightmare" scenario, a driver, turning down side streets to avoid random breath testing, was faced with police cars at every turn. The full-page print advertisement, shown in Figure 2.7, repeated the warning that "every

# Random Breath Testing is really quite simple.

## You're under ·05.

There's been a lot of speculation and rumour about Random Breath Testing. Someone's probably told you "exactly how it will work".

If that's so, you've probably been given the wrong steer. What follows is a clear explanation of Random Breath Testing. It will be worth your while to read it carefully.

Random Breath Testing comes into force on December 17. You can expect to be RBT'd anywhere in New South Wales. You can expect to be RBT'd at any time – day or night.


Here is what will happen:

You will be signalled to stop by a uniformed police officer. You will be asked to produce your licence. Your age and sex will be recorded for statistical purposes. Your name, address and licence number will not be recorded. The officer will then state the following: "In accordance with provisions of the Motor Traffic Act I now require you to undergo a breath test for the purpose of indicating the concentration of alcohol present in your blood and I direct you to exhale deeply air from your lungs directly into this approved device."

The breath-testing device will clear you instantly, providing you have not been driving with a Blood Alcohol Concentration of ·05 per cent or more, and you will be on your way again.

The test itself, in the vast majority of cases, will be a swift and simple procedure that will take a minute or two.

Certainly there will be some inconvenience. But it's a small price to pay for the knowledge that you, your family and your friends are being protected from the drinking driver. And make no mistake: the drinking driver is a major contributor to the tragic road toll. At ·05, he or she is twice as likely to have an accident. At ·15, he or she is twenty six times as likely. Last year, alcohol played a part in over 40% of the 1,292 deaths and 39,068 injuries on New South Wales roads.

In Victoria, where Random Breath Testing has been operating widely since 1978, road deaths have dropped by a dramatic 20%.

Random Breath Testing, then, is a most effective way to reduce the incidence of drink-driving and, as a result, road deaths and injuries.

## Or under arrest.

It is a powerful incentive to avoid driving after drinking three standard drinks in an hour (or four drinks in two hours, five in three and so on).

Even such a small quantity of alcohol virtually guarantees that you will fail the test. And the consequences of failure are dire, to say the least.

You are placed under arrest. You are taken to the police station, or the Breathalyzer bus, and subjected to a scientific breath analysis on the Breathalyzer equipment.

This will give a reading of your Blood Alcohol Concentration, which will in turn determine the penalty to be handed down by the Court.

Even the first offender with a Prescribed Concentration of Alcohol reading of ·05 could be fined up to $500 and could be disqualified from driving for six months.

Higher PCA readings or second offences attract severe penalties including minimum mandatory periods of licence disqualification, fines up to $2,000 and gaol sentences up to 12 months.

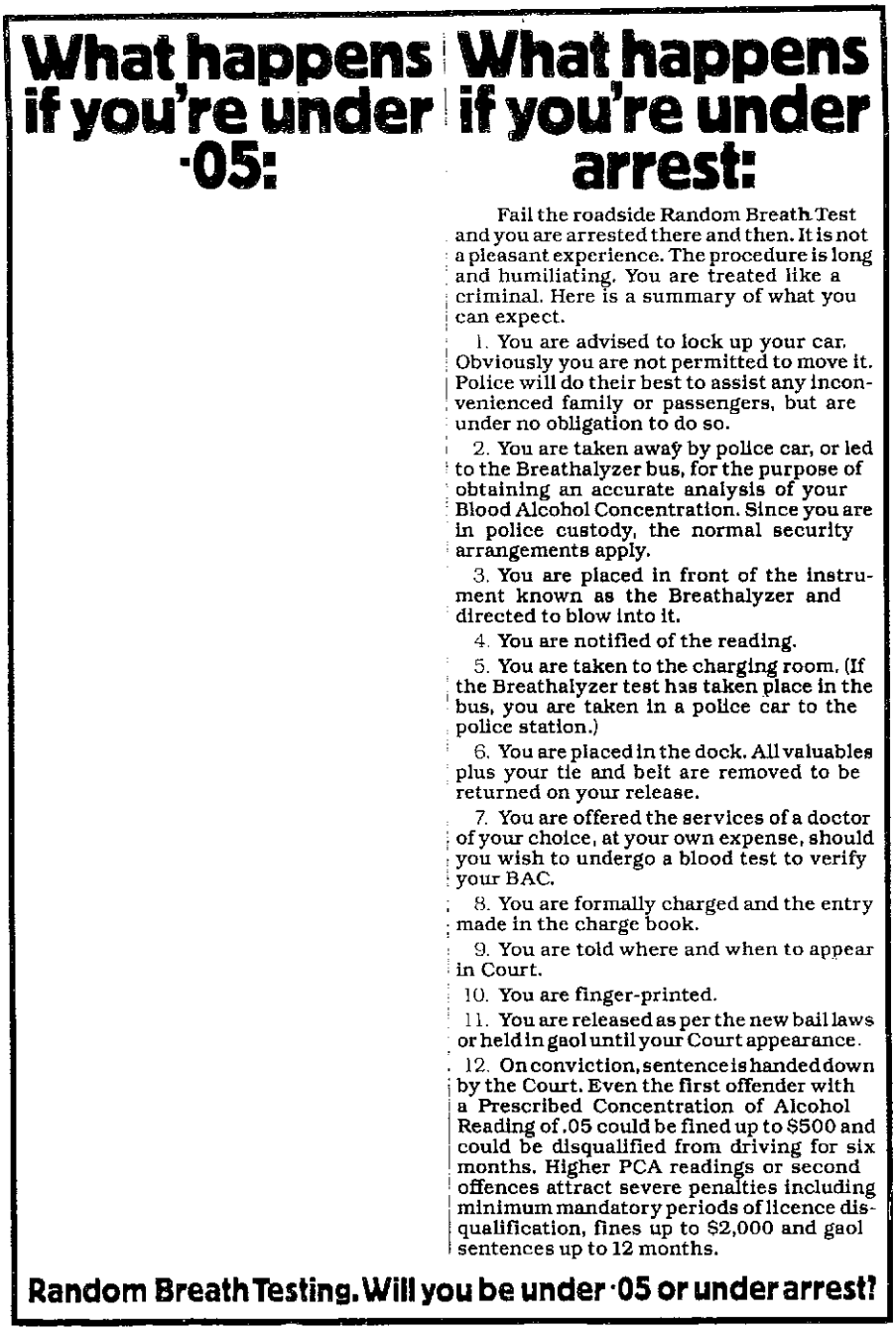
How will you go when you sit for the test?

Will you be under ·05?

Or under arrest?

**Random Breath Testing is just around the corner.**

Figure 2.1. Double-page RBT advertisement — 1983 campaign.



# What happens if you're under ·05:

# What happens if you're under arrest:

Fail the roadside Random Breath Test and you are arrested there and then. It is not a pleasant experience. The procedure is long and humiliating. You are treated like a criminal. Here is a summary of what you can expect.

1. You are advised to lock up your car. Obviously you are not permitted to move it. Police will do their best to assist any inconvenienced family or passengers, but are under no obligation to do so.
2. You are taken away by police car, or led to the Breathalyzer bus, for the purpose of obtaining an accurate analysis of your Blood Alcohol Concentration. Since you are in police custody, the normal security arrangements apply.
3. You are placed in front of the instrument known as the Breathalyzer and directed to blow into it.
4. You are notified of the reading.
5. You are taken to the charging room. (If the Breathalyzer test has taken place in the bus, you are taken in a police car to the police station.)
6. You are placed in the dock. All valuables plus your tie and belt are removed to be returned on your release.
7. You are offered the services of a doctor of your choice, at your own expense, should you wish to undergo a blood test to verify your BAC.
8. You are formally charged and the entry made in the charge book.
9. You are told where and when to appear in Court.
10. You are finger-printed.
11. You are released as per the new bail laws or held in gaol until your Court appearance.
12. On conviction, sentence is handed down by the Court. Even the first offender with a Prescribed Concentration of Alcohol Reading of .05 could be fined up to $500 and could be disqualified from driving for six months. Higher PCA readings or second offences attract severe penalties including minimum mandatory periods of licence disqualification, fines up to $2,000 and gaol sentences up to 12 months.

**Random Breath Testing. Will you be under ·05 or under arrest?**

Figure 2.2. Full-page RBT press advertisement — Easter 1983 campaign.


Figure 2.3. 24-sheet bill-board poster — 1983 campaign.

# How Random Breath Testing has arrested one of the world's worst road tolls.

Until recently, the New South Wales road toll was well above that of Great Britain, the U.S.A. and Canada.

Compared with similarly motorized countries, we had one of the highest road tolls in the world.

Now, however, we have one of the lowest.*

The decision to introduce Random Breath Testing, and to energetically enforce it, has saved lives beyond all expectation. Just over three months of RBT, December 17 to March 21, have seen a reduction in road fatalities of 42.9 per cent compared with the corresponding period the year before.

The Christmas/New Year toll, thanks to RBT, was down to 22... from 52 in 1981/82. A reduction of 57.7 per cent.

It was this State's lowest Christmas/New Year road toll in 23 years. And the whole of 1982, which could well have been the highest road toll on record, ended instead as the lowest in nine years.

It is fair to say that around 200 lives have already been saved as a result of the anticipation and implementation of RBT, and that people are continuing to be saved at the rate of two or three a day. You, or someone close to you, could be alive because a drinker was deterred from driving.

While each life saved is justification enough in terms of the small inconvenience of RBT, there is much more. Had the measure not been introduced, an additional 1,500 people would have been seriously injured during the past few months. Many thousands more would have been directly affected by the tragedy.

What this would have cost the community in terms of suffering can't be calculated.

What it would have cost in dollars runs into tens of millions – money spent on hospitalization, third party insurance, police time, court costs and so on.

While RBT might be a regrettable financial burden to some, there is no doubt that the savings to the community as a whole are enormous.

Why is RBT working?

Simply because motorists and motorcyclists have so readily adapted to the requirement that they drive or ride with a blood alcohol concentration under 0.05 per cent.

Of more than 175,000 who have "sat for the test" so far, 99.5 per cent have passed. Less than 1,000 have been arrested and charged.

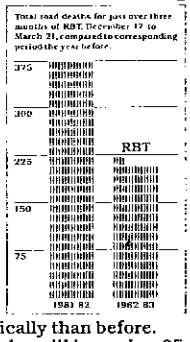
The police are committed to doing everything they can to see that the success of RBT continues.

A new kind of RBT has been introduced: police are now operating from patrol cars on back roads, main roads and highways.

Breathalyzer buses are also in operation day and night.

Blitzes will occur during all high-risk holiday periods.

The results so far of RBT provide every incentive to enforce it even more energetically than before.




To those 99.5 per cent who will be under .05 when tested, we apologise for the inconvenience.

To the .5 per cent who will be under arrest – we make no apologies.

Random Breath Testing.

Will you be under .05 or under arrest?

*In 1981, N.S.W. had 3.9 road deaths per 100 million vehicle kilometres travelled. Great Britain had 2.0, U.S.A. had 2.1 and Canada had 2.7. Following the introduction of RBT, the N.S.W. death rate has dropped to 1.7

Figure 2.4. Full-page press advertisement which appeared in Sydney only in mid-1983.

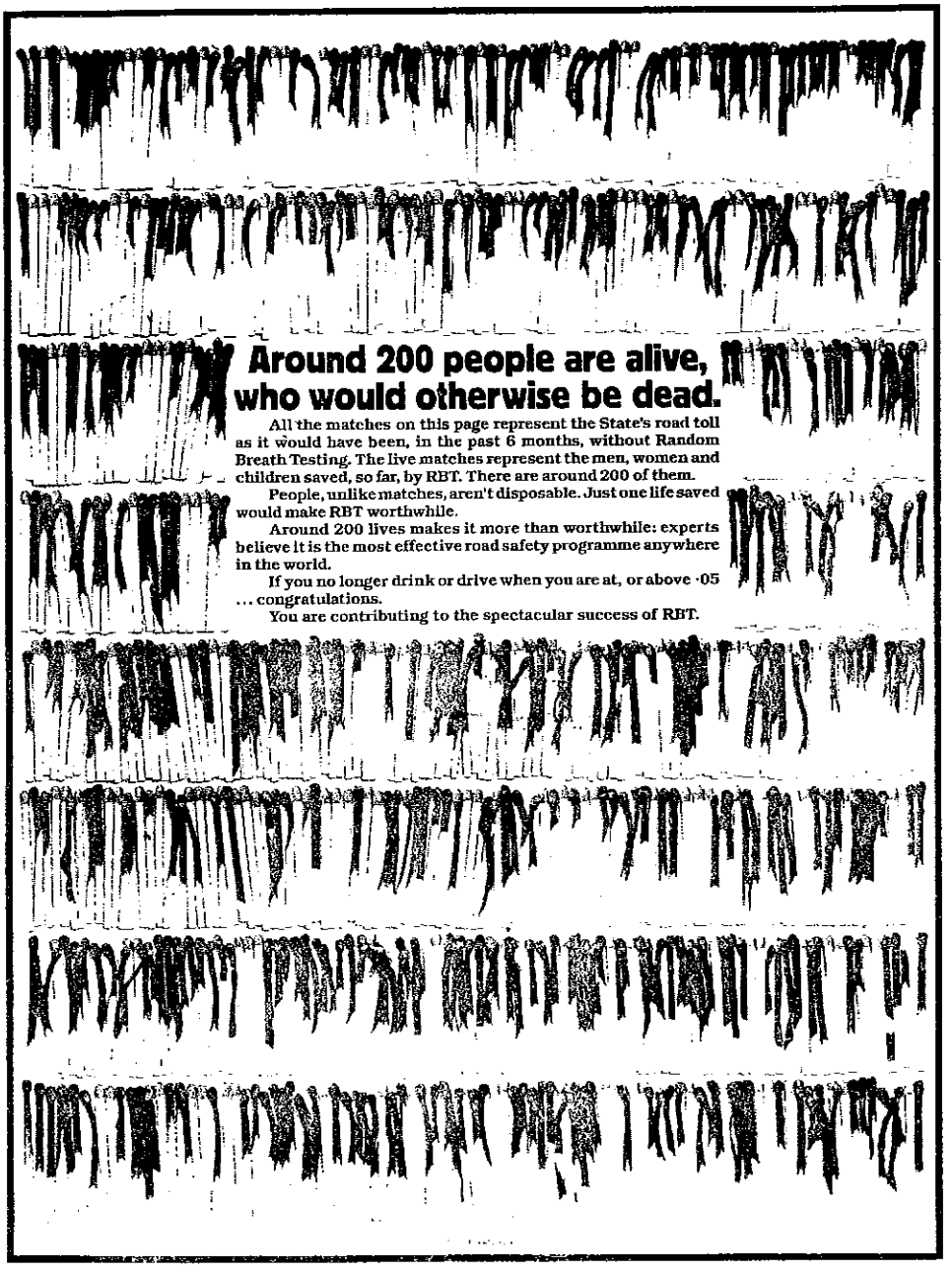



Figure 2.5. Full-page press advertisement which appeared in Sydney only in mid-1983.

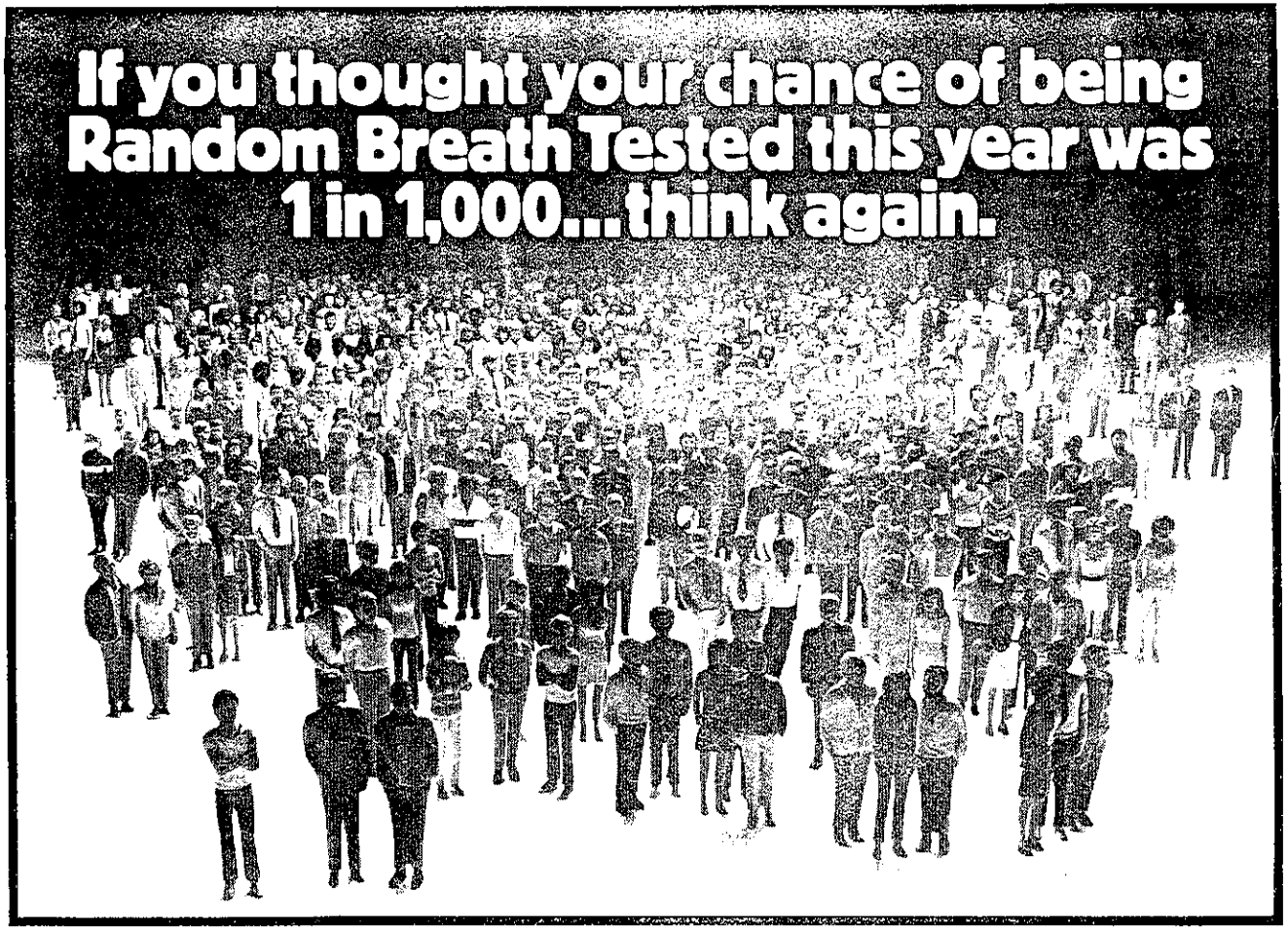



Figure 2.6. Two consecutive half pages for press — 1984 campaign.


Figure 2.6. (Continued)

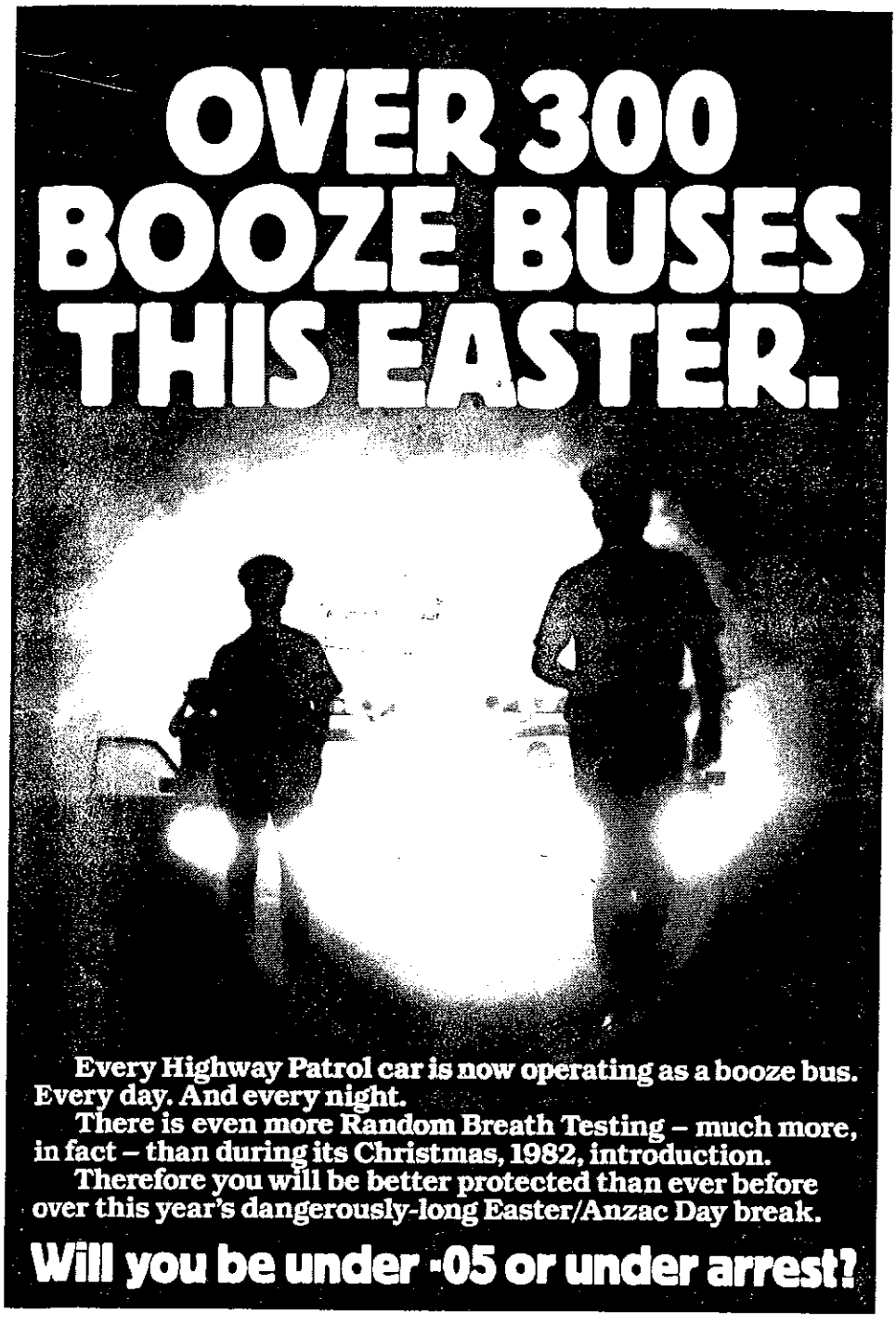



Figure 2.7. Full-page press advertisement — 1984 campaign.

police car is now a booze bus". The overall budget from December 1983 to June 1984 was $1.23 million; this was increased by $21,500 to include additional advertising before 25 April (Anzac Day) when the number of road deaths until the end of March 1984 was higher than for 1983.

*Christmas 1984*

The Christmas 1984 campaign was the beginning of another $1 million media campaign, and again concentrated on the likelihood and consequences of "being caught". The slogan featured in each advertisement was "Stay under .05 or get off the road". One television advertisement showed a series of police patrol cars, each with the boot open and displaying the sign "Police Breath Testing", all observed from the viewpoint of a motorist driving past. The voice-over stressed again that "every Highway Patrol car in New South Wales is now a booze bus". Another television advertisement was particularly aimed at (young) men: in a bar-scene, a man ordering another drink was told by the bar-tender of the possible costs associated with that drink in the event of an accident — about $10,000, including fines, loss of insurance, car repairs, etc.

*Easter 1985*

The most recent campaign running up to Easter 1985 repeated the slogan used over the previous Christmas, but changed tack by shifting the focus from the threat of apprehension and punishment to the consequences of drink-driving from the perspective of an accident victim and his family. This campaign, intensively publicised over the Easter holiday period, was budgeted at $250,000.

*Other advertising compaigns*

So there has been continued publicity, sponsored by the New South Wales Government, reinforcing the basic message about the .05 limit and the consequences of drink-driving. At the same time, several campaigns sponsored by other bodies provided a background to the state government campaign. The "Cronin" commercials (featuring Paul Cronin, star of a popular television series) were part of a Commonwealth Government campaign against drink-driving. These television advertisements involved a number of group-drinking scenarios (bar, dinner party, etc.) and ended with the slogan questioning viewers, "What kind of friend are you? Would you let a friend drive . . .?" These advertisements provided a model of behaviour for friends of people who had been drinking and thereby used quite a different approach from the fear-of-arrest basis of the New South Wales campaign. The commercials produced for the NRMA (National Roads and Motorists' Association) used another angle again — these commercials showed the "smash" of a glass car filled with beer, followed by the slogan, "Don't blow it".

There were therefore several anti-drink-drive campaigns, but the results of Homel's surveys in February and April 1983, and the results of a group discussion study conducted in June 1983 (Elliott & Shanahan, 1983) indicate that the New South Wales Government campaign ("Under .05 or under arrest") was the most widely known and the best recalled. A high proportion of those surveyed by Homel (1985) was aware of these advertisements, with 68% able to recall some aspect of the television advertisement. As Elliott and Shanahan (1983) point out, however, the effect of the paid advertising campaign was "heightened by the massive media coverage, including news items on television, radio, daily newspapers and suburban papers. Random breath testing became a very newsworthy item" (p. 20).

The paid advertising campaign was basically under the control of the New South Wales Government, but the government had and still has less control over news stories publicised by the print and broadcasting media. There is still some control, however, because as Chibnall (1977) and Gusfield (1981) point out, there is "structured access" to the media for those in "legitimate institutional positions", especially accredited spokespersons of the state. But in order to be rated as newsworthy by the press, a story has to meet a number of criteria outlined by Chibnall (1977). These include immediacy, an emphasis on the dramatic, novelty, and the ability to be personalised and simplified. Because of its widespread impact on the community, random breath testing was newsworthy, and a number of related aspects, including the operation of blitzes, pronouncements about the success of random breath testing, its effects upon related businesses (especially the liquor industry), and unusual cases involving court hearings, all became "news".

The way in which the print media covered these issues is the subject of a study which is presented in this section. This study investigated, using content analysis, the amount and type of coverage given to random breath testing by newspaper articles. Holsti (1969) defined content analysis as the technique of "making inferences by objectively and systematically identifying specified characteristics of messages". This section of the chapter describes the method and results of content analysis based on newspaper articles about random breath testing and drink-driving. A newspaper clipping service was used to gather the articles appearing in metropolitan and country newspapers in the two-year period between 1 July 1982 and 30 June 1984 for metropolitan/national newspapers, and in the one-year period from 1 July 1983 to 30 June 1984 for country newspapers. There were 722 articles from metropolitan newspapers, and 212 from country papers. Not all country papers were included; one town (with the greatest number of articles) from each statistical division in New South Wales was selected and all the articles appearing in the newspapers for these towns were included in the sample.

*Procedure*

A coding system was designed to extract both quantitative and qualitative information from each newspaper article (see Appendix IV). The first of three categories of information concerned the physical characteristics of the article and included data such as the date, name of the newspaper, page number, size of the article (in column centimetres), size of the headline (in square centimetres), type and size of the illustration (in square centimetres) and the type of article (news story, editorial, etc). The second category referred to sources cited in the article. The third category concerned the type of issue(s) discussed in the article. It included four sections:

(a) Problems addressed regarding road safety and drink-driving issues other than random breath testing;
(b) Description of random breath testing operations;
(c) Evaluation of the impact of random breath testing; and
(d) Other issues relating to random breath testing.

Each issue was coded according to whether it was discussed in the article and whether it was the main issue. The section on evaluative issues was coded differently from the other sections, on a three-point scale (negative, neutral or positive). The coding of articles was carried out by three persons. Each article was coded separately

by two coders for reliability. In rare cases of disparity between two coders, the third coder was consulted and discussion among all three coders produced agreement on the final coding.

*Results*

Altogether, 934 articles were analysed: 722 from major Sydney metropolitan newspapers and 212 from country newspapers. The country was further divided into two areas: Newcastle and Wollongong, and the rest of the country. The results for each of these areas are presented separately because of expected differences in the content of articles from these areas and because of the difference in the size of collections for metropolitan and country newspapers.

## Metropolitan newspapers

*Number, size and type of article*

The peak in media interest in random breath testing was in December 1982 when the greatest number of articles on the issue was published (Figure 2.8). Such a high level of coverage in this month was expected because of the introduction of random breath testing on 17 December 1982. Each year, articles appeared most frequently in the months of January, April and December, coinciding with the holiday seasons of Christmas/New Year and Easter, when long-distance driving trips and also festivities involving alcohol are common. The lowest level of interest was between May and December of 1984.

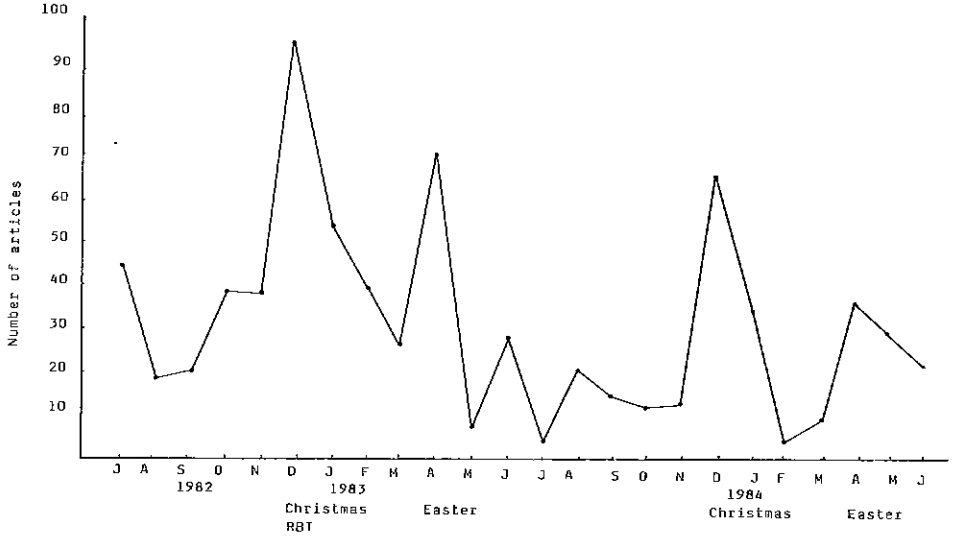



Figure 2.8. Number of articles in metropolitan newspapers by month and year.

The majority of articles (82.5%) were news stories, with the remainder comprising editorials, letters to the editor, feature articles and a miscellaneous bag of cartoons, advertisements and one-paragraph interest stories.

The placement or page number of the article was known for 70% of articles and, of these, a large proportion (47.0%) appeared on the second to fifth page of the newspaper. A smaller number (73, 10.1%) were front-page articles or had front-page teasers (9, 1.3%).

*Size of articles.* The amount of space given in newspapers to the issue of random breath testing and related issues was measured in column centimetres for the text, and in square centimetres for the headline and illustrations. Table 2.1 shows the number of articles on random breath testing in the eight quarterly periods between July 1982 and June 1984, and the amount of space devoted to random breath testing. Altogether, the 722 metropolitan newspaper articles totalled 16,119 column centimetres of text, with an average length of 22.3 centimetres, and nearly 45,000 square centimetres of headline space. This is the equivalent of about 75 full pages of text in the *Daily Telegraph* and about 47 full pages of headline space in the same paper. The total number of column centimetres of text was greatest between October and December 1982, prior to and around the time that random breath testing was introduced; not surprisingly, this was when the greatest number of articles was published. In contrast, headline space was greatest in the first quarter of 1983, the first few months of operation of random breath testing. During January 1983, for example, there were 13 front-page articles with banner headlines, more than for any other single month. These articles covered topics ranging from new breath testing kits available to the public to the prediction of the return to the .08 limit.

Illustrations (photographs, maps etc.) serve an important function of attracting attention as well as presenting information economically. Altogether, 202 articles (27.8%) included an illustration. Most depicted a person, frequently a government official, or George Paciullo (Chairman of the Parliamentary Committee on Road Safety) or a police officer. Fewer illustrations (especially photographs) appeared in the last four quarterly periods than in the first four (see Appendix V).

*Number of articles by newspaper.* The majority of articles were published in two newspapers — the *Daily Telegraph* (29.6%) and the *Sydney Morning Herald* (24.1%) (Table 2.2). These are the major morning newspapers (one a broadsheet and the other a tabloid), and together they have wide circulation, totalling over half a million readers. In terms of article size, the *Sydney Morning Herald* (a broadsheet) devoted more text (in column centimetres) to these articles, but the *Daily Telegraph* (a tabloid) provided more headline space and illustrations. There was little difference in either the number or the size of articles between the two evening papers (*Daily Mirror* and *Sun*) or between the two Sunday papers (*Sunday Telegraph* and *Sun-Herald*), apart from the greater space given to illustrations in the Sunday Telegraph. The biggest headlines overall appeared in the two evening papers (averaging 95.6 cms in the *Sun* and 88.7 sq. cms. in the *Daily Mirror*).

*Source of articles*

A total of 1,108 sources were cited in 685 articles (45 articles had no source stated), giving an average of 1.6 sources per article. As Table 2.3 shows, the most frequently cited source was a government authority, particularly between October and December 1982.

Other sources frequently cited during the two-year period were the police and George Paciullo (while Paciullo was Chairman of the Joint Parliamentary Committee on Road Safety (Staysafe) until late 1983). The high profile of George Paciullo in promoting random breath testing was reflected in the recognition of his

**Table 2.1 Number and size of articles by quarter of year**

| | Number of articles | Text (col. cms.) | Headline (sq. cms.) | Number of illustrations | Illustrations (sq. cms.) |
|---|---|---|---|---|---|
| *1982* | | | | | |
| Jul-Sep | 80 | 1,432 | 4,817 | 19 | 1,177 |
| Oct-Dec | 167 | 3,934 | 9,346 | 46 | 3,998 |
| *1983* | | | | | |
| Jan-Mar | 115 | 2,736 | 10,314 | 39 | 2,723 |
| Apr-June | 101 | 2,430 | 6,337 | 32 | 4,964 |
| Jul-Sep | 37 | 805 | 2,206 | 12 | 981 |
| Oct-Dec | 89 | 1,851 | 3,827 | 22 | 2,491 |
| *1984* | | | | | |
| Jan-Mar | 46 | 928 | 2,354 | 8 | 992 |
| Apr-Jun | 87 | 2,003 | 4,884 | 24 | 2,164 |
| TOTAL | 722 | 16,119 | 44,085 | 202 | 19,400 |

**Table 2.2 Number and size of articles by newspaper**

| Newspaper | Readership figures* | Publication time | Number of articles | | Text (col. cms.) | Headlines (sq. cms.) | Illustrations (sq. cms.) |
|---|---|---|---|---|---|---|---|
| | | | No. | % | | | |
| *Daily Telegraph* | 299,797 | Morning | 214 | 29.6 | 3,732 | 11,604 | 4,639 |
| *Sydney Morning Herald* | 258,700 | Morning | 173 | 24.0 | 4,152 | 4,944 | 2,880 |
| *Sun* | 310,871 | Evening | 119 | 16.5 | 2,504 | 11,376 | 2,720 |
| *Daily Mirror* | 329,472 | Evening | 114 | 15.8 | 2,667 | 10,113 | 3,674 |
| *Australian* | 115,705 | Morning | 34 | 4.8 | 975 | 882 | 517 |
| *Sunday Telegraph* | 637,534 | Sunday | 35 | 4.7 | 967 | 2,389 | 3,194 |
| *Sun Herald* | 649,754 | Sunday | 28 | 3.9 | 1,039 | 2,691 | 1,776 |
| *Financial Review* | 60,000 | Morning | 4 | 0.6 | 39 | 36 | 0 |
| *National Times* | 86,046 | Weekly | 1 | 0.1 | 44 | 50 | 0 |
| TOTAL | | | 722 | 100.0 | 16,119 | 44,085 | 19,400 |

* Margaret Gee's Media Guide (1985).

**Table 2.3 Number of sources by half-year**

| Source | Jun-Dec 82 | Jan-Jun 83 | Jun-Dec 83 | Jan-Jun 84 | Total |
|---|---|---|---|---|---|
| Police | 49 | 62 | 37 | 58 | 206 |
| Paciullo/Staysafe | 81 | 90 | 37 | 9 | 217 |
| Government | 92 | 54 | 52 | 54 | 252 |
| Political parties | 29 | 6 | 3 | 9 | 47 |
| Business associations | 34 | 35 | 12 | 9 | 90 |
| Community | 9 | 22 | 7 | 15 | 53 |
| Courts | 3 | 11 | 5 | 14 | 33 |
| NRMA | 13 | 7 | 2 | 6 | 28 |
| Non-government associations | 19 | 14 | 8 | 11 | 52 |
| Hospitals/medical | 16 | 19 | 4 | 4 | 43 |
| Other (including academics) | 28 | 18 | 13 | 15 | 74 |

role as "the father of random breath testing" (Elliott & Shanahan, 1983). Sources most likely to be cited together within an article were the police, Paciullo/Staysafe and the government; and business associations and the government.

The frequency with which several sources were likely to be cited dropped markedly over the two-year period. While government officials and the police remained consistent sources, Staysafe was cited less frequently in 1984 than previously, and business associations and hospital and medical spokespersons were much less likely to be named as sources beyond the middle of 1983. As Table 2.1 indicated, the number of articles dropped from mid-1983, but it is also likely that these changes in source citation reflect changes in the content of articles, with news stories about the effects of random breath testing on business and hospitals becoming less frequent.

*Content of articles*

As indicated earlier, each article was coded for the presence or absence of the discussion of issues in the following four categories: (a) the problem addressed, which included general issues (other than random breath testing) related to road safety, drink-driving, alcohol and drugs; (b) descriptions of random breath testing legislation, police operations and court procedures; (c) evaluations of random breath testing, and (d) other topics related to random breath testing which were neither descriptions nor evaluations. The coding also indicated whether the issue was the main issue of the article or a secondary issue.

Table 2.4 shows the number of articles in which each general content category was referred to either as a main or secondary issue; the number of articles in which each was a main issue is shown in parentheses. Since each article could contain several secondary issues, but only one main issue, the total number of references to secondary and main issues is greater than the number of articles. Overall, the group of issues most likely to be discussed as both the main issue and as a secondary issue was the evaluation of random breath testing. The number of articles dealing with evaluation as a main issue reached a peak in the immediate period around the introduction of random breath testing and continued at a high rate until after June 1983. Since January 1984, there have been relatively few evaluations of random

**Table 2.4 Number of references to issues by quarter of year and content category**

| | No. of articles | Problem addressed | Description of RBT | Evaluation of RBT | Other related topics |
|---|---|---|---|---|---|
| *1982* | | | | | |
| Jul-Sep | 80 | 63 (40) | 36 (22) | 30 (12) | 4 (6) |
| Oct-Dec | 167 | 76 (36) | 115 (41) | 117 (67) | 41 (16) |
| *1983* | | | | | |
| Jan-Mar | 115 | 42 (15) | 56 (20) | 91 (57) | 48 (22) |
| Apr-Jun | 101 | 48 (29) | 51 (10) | 71 (49) | 22 (13) |
| Jul-Sep | 37 | 78 (13) | 12 (5) | 29 (14) | 8 (5) |
| Oct-Dec | 89 | 36 (24) | 56 (21) | 67 (37) | 16 (7) |
| *1984* | | | | | |
| Jan-Mar | 46 | 25 (15) | 20 (6) | 26 (12) | 19 (13) |
| Apr-Jun | 87 | 57 (2) | 48 (17) | 37 (12) | 26 (15) |
| TOTAL | 722 | 425 (174) | 394 (142) | 468 (260) | 184 (97) |

breath testing as a main issue. Instead, interest has been diverted to more general issues falling into the category of "problem addressed" and "other related issues". "Descriptions of random breath testing" and "other topics related to random breath testing" were less likely than the two preceding categories to be discussed as main issues. Not surprisingly, however, descriptions of random breath testing appeared most frequently as a main issue in December 1982, when random breath testing came into operation.

Within each group of general content areas, there was a number of more specific content categories. The number of times these specific areas were mentioned as both a main and a secondary issue is shown in Table 2.5. It should be noted that since more than one area within a general content area could be mentioned within one article, these figures do not match the number of articles, except for the main issue. A breakdown by quarter of year is presented for each category in Appendix VI. The evaluation category is discussed separately later.

As Table 2.5 shows, the most frequently appearing content areas or issues were the descriptions of police operations and the problem of road safety. Both issues were referred to most often around the key holiday periods of Christmas/New Year and Easter. The description of police operations included police "news" about impending blitzes and also figures on the number of tests conducted and the number of people charged. Before random breath testing was introduced, the public was informed of the way in which it would operate, with the number of such reports reaching a peak in the week before its introduction. For example, there were articles headed "Non-stop drivers' blitz on — in just five days the party will be over for N.S.W. motorists" (*Sunday Telegraph*, 12 December 1982), and "Police booze buses gear up for start of random breath tests" (*Sydney Morning Herald*, 16 December 1982). Following the introduction of random breath testing, there were several stories about police moves to counter avoidance behaviour ("Police put breath tests on back roads", *Daily Telegraph*, 13 January 1983).

**Table 2.5 Number of references by type of reference and content category**

| Content area | Main issue | Secondary issue | Total |
|---|---|---|---|
| *Problem addressed* | | | |
| • Road safety | 92 | 161 | 253 |
| • Drink-driving | 61 | 89 | 150 |
| • Alcohol/drugs | 35 | 38 | 73 |
| • Other | 26 | 33 | 59 |
| *Descriptions of random breath testing* | | | |
| • Legislation | 49 | 113 | 162 |
| • .05/.08 legislation | 4 | 45 | 49 |
| • Police operations | 71 | 178 | 249 |
| • Courts reports (RBT) | 8 | 10 | 18 |
| • Other | 10 | 18 | 28 |
| *Other related issues* | | | |
| • Personality | 26 | 30 | 56 |
| • Testing kits | 17 | 8 | 25 |
| • Court reports (non-RBT) | 31 | 23 | 54 |
| • Other (includes blood sampling) | 23 | 3 | 26 |

The specific content area referred to most in the "other related areas" category was "personality" stories. These were stories about well-known people (for example, actors, football "stars") who had been charged with drink-driving offences. It also included the more bizarre: for example, the problem of an amputee whose blood alcohol concentration was affected by his lower body weight and volume of blood. The other frequent references in this general caregory were court reports for people charged with drink-driving offences, but apprehended by means other than random breath testing.

*Evaluation*

Perhaps the most important aspect of any article is the evaluative note it strikes about the topic at issue. With respect to random breath testing, the evaluation tended to centre on the various effects of random breath testing — in particular, its effect on the road toll, on drinking and driving habits, and on related businesses. The efficiency of police operations of random breath testing also attracted evaluative coverage. As explained earlier, references to these issues were coded on a three-point scale according to whether the discussion of the issue was positive, negative or neutral.

About 65% of articles (469 out of 722) contained some evaluative reference to random breath testing; of the 988 coded evaluations, 41.9% were positive, 32.0% negative and 26.1% neutral. Whether the evaluation was positive, negative or neutral varied with two factors — when the article was published and the specific issue involved. In terms of time, evaluative references were more likely to be positive than negative once random breath testing was operating — in 1983 there were 255 positive references compared with 146 negative — but before its introduction, the comments were just as likely to be negative as positive. The reason for this shift in tone relates to the specific topic involved in the evaluation. Some topics, such as the civil liberties issue and the effect of random breath testing on alcohol-related businesses, were more likely to involve negative than positive evaluations but these topics also attracted little attention in the press beyond the early months so that the overall proportion of negative evaluations tended to drop over time. The number of negative, positive, and neutral evaluative references is shown in Table 2.6 by quarter of the year and in Table 2.7 by issue. A joint breakdown by both quarter and issue is presented in Appendix VII.

*Road safety and the deterrent effect of random breath testing.* Since the main aim of random breath testing is to deter drink-driving and so reduce the number of alcohol-related crashes, it is not surprising that the largest number (281) of evaluative comments referred to the impact of random breath testing on the road toll. A number of newspapers, in fact, took a positive stand, and urged the introduction of random breath testing as a positive step toward reducing the unacceptably high road toll. As early as August and September of 1982, the *Daily Telegraph* published reports and editorials headed "How to kill the road toll" (17 August 1982) and "20,000 hurt on roads" (13 September 1982). Within two weeks of its introduction, a number of articles proclaimed the success of random breath testing. Headlines declared that random breath testing was the direct cause of decreased death and injury on the roads: "Xmas B-tests cut road toll" (*Sunday Telegraph*, 26 December 1982), and "RBT-20 fewer have died" (*Sydney Morning Herald*, 28 December 1982). This positive message was repeated in newspaper reports throughout January and continued into February and March ("RBT saves 150 lives", *Daily Telegraph*, 3 March 1983).

**Table 2.6 Number of positive, neutral and negative evaluative references by quarter of the year**

| | Articles with evaluation | | | No. of evaluations | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Positive | | Neutral | | Negative | |
| | No. | %[a] | %[b] | No. | %[c] | No. | %[c] | No. | %[c] |
| *1982* | | | | | | | | | |
| Jul-Sep | 30 | 6.4 | 38.0 | 19 | 35.2 | 12 | 22.2 | 23 | 42.6 |
| Oct-Dec | 118 | 25.2 | 70.7 | 92 | 34.3 | 81 | 30.2 | 95 | 35.4 |
| *1983* | | | | | | | | | |
| Jan-Mar | 91 | 19.4 | 79.1 | 93 | 47.9 | 46 | 23.7 | 55 | 28.4 |
| Apr-Jun | 71 | 15.1 | 70.3 | 65 | 41.7 | 39 | 25.0 | 52 | 33.3 |
| Jul-Sep | 30 | 6.4 | 81.1 | 24 | 51.1 | 9 | 19.1 | 14 | 29.8 |
| Oct-Dec | 66 | 14.1 | 75.9 | 73 | 53.3 | 39 | 28.5 | 25 | 18.2 |
| *1984* | | | | | | | | | |
| Jan-Mar | 26 | 5.5 | 56.5 | 17 | 30.4 | 14 | 25.0 | 25 | 44.6 |
| Apr-Jun | 37 | 7.9 | 42.5 | 31 | 40.7 | 18 | 23.7 | 27 | 35.5 |
| TOTAL/OVERALL | 469 | 100.0 | 64.9 | 414 | 41.9 | 258 | 26.1 | 316 | 32.0 |

[a] Percentage of total number of articles containing evaluations.
[b] Number of articles per quarter containing evaluation as a percentage of all articles per quarter.
[c] Number of evaluations as percentage of all evaluations per quarter.

**Table 2.7 Number of positive, neutral and negative evaluative references by issue**

| | No. of evaluations | | | | | | |
|---|---|---|---|---|---|---|---|
| | Positive | | Neutral | | Negative | | |
| | No. | % | No. | % | No. | % | Total |
| Road safety (fatalities/injuries) ... | 187 | 66.5 | 52 | 18.5 | 42 | 15.0 | 281 |
| Drink-drive behaviour (deterrence) | 65 | 44.8 | 31 | 21.4 | 49 | 33.8 | 145 |
| Attitudes to RBT | 47 | 39.8 | 41 | 34.7 | 30 | 25.4 | 118 |
| Police efficiency | 27 | 29.0 | 30 | 32.2 | 36 | 38.7 | 93 |
| Business — liquor-related | 6 | 7.1 | 22 | 26.2 | 56 | 66.7 | 84 |
| Business — non-liquor | 16 | 57.1 | 7 | 25.0 | 5 | 17.9 | 28 |
| Economic cost/benefits (hospitals/medical etc.) | 37 | 88.1 | 1 | 2.4 | 4 | 9.5 | 42 |
| Civil rights | 6 | 9.1 | 16 | 24.2 | 44 | 66.7 | 66 |
| Political cost/benefits | 13 | 16.1 | 36 | 44.4 | 32 | 39.5 | 81 |
| .05 versus .08 | 10 | 20.0 | 22 | 44.0 | 18 | 36.0 | 50 |
| TOTAL | 414 | | 258 | | 316 | | 988 |

The first change of tone appeared with the front-page story headed "Breath blitz losing effect" (*Sun*, 4 April 1983), a result of the Easter road toll of 16 (to the Monday holiday) being one higher than the previous year. Other papers, after Easter, were more positive, attributing the reduced road toll, despite the wet weather, to the impact of random breath testing. The predominance of positive comment on the effect on the road toll continued throughout 1983 and into 1984. But in 1984, with an increase in the number of fatalities over the 1983 figures, there

were more comments about the reduced effect. At the same time, and since Easter 1983, there were some negative references to the waning deterrent effect, although overall there were more positive than negative evaluations of the deterrent effect on drink-driving behaviour. In summary, the evaluation by newspapers of the effect of random breath testing on road injuries and fatalities has been strongly positive, with some cautious comments about the "expected" declining effect.

*Economic savings.* Similarly, the economic savings resulting from the reduced number of crashes received very strong positive comment, though less attention overall; 88.1% of 44 evaluations on this topic were positive. Most of these references appeared in the first three months of random breath testing (see Appendix VII) and referred to savings in medical and hospital costs and in decreased insurance charges as several insurance companies cut their rates following reduced payouts on road crashes (for example, "Booze bus team saves taxpayers a fortune", *Daily Telegraph,* 31 March 1983).

*Liquor-related businesses.* Several issues, including the effect of random breath testing predictably drew more negative than positive references about random breath testing. The negative references appeared largely in news stories reporting, first the opposition of liquor-related associations (Australian Hotels Association and the Registered Clubs Association) before the introduction of random breath testing ("A lot of nonsense by bloody wowsers", *Sunday Telegraph,* 14 November 1982), and later the effect on sales and employment. The editorials in several newspapers were, however, more neutral or positive. The *Daily Telegraph,* for example, was quite scathing in its judgment of the vested interests of the clubs, saying that the possible losses for clubs "pale into insignificance with the ones that really count — the road death toll . . . The Premier must ignore the lobbying of the clubs, pubs and other interests and stick with random testing" (27 December 1982). The discussion of alcohol sales in Chapter 7 deals further with the opposition of liquor-related industries to random breath testing.

One positive effect for liquor-related businesses was reported in the press; it concerned the reduction in the number of unwelcome visitors to wineries intent on a free drinking session rather than tasting (*Sydney Morning Herald,* 5 March 1983).

It is significant that the number of evaluative references concerned with the impact of random breath testing on liquor-related businesses dropped markedly after the first few months (see Appendix VII). It seems that the proclaimed success of random breath testing in reducing the road toll made their objections untenable or less publicly acceptable.

*Civil liberties.* The civil liberties issue was another issue which yielded more negative than positive references, and which also gained little attention after the first few months (see Appendix VII). The falling away of discussion on this topic was probably a reflection of the resignation to, if not acceptance of, the status quo; the majority of the 65 references to the civil liberties issue, mostly negative (44), appeared in newspapers before the introduction of random breath testing. The issue was mostly debated in letters to the editor or in editorials, although statements by the Law Society and the Civil Liberties Council were also reported in news stories. The *Australian* published one of the very few editorials opposing random breath testing, in part because it was considered "a bad law":

> It is a gross intrusion on human rights and freedoms in that it requires citizens going properly about their lawful business to submit themselves to police detainment and testing simply because they *might* be guilty of an offence . . . it is a law for a police state, not a free society (*Australian,* 29 December 1982).

*.05 versus .08.* Like the other two issues which drew more negative than positive evaluative references, debate about the blood alcohol limit occurred mostly within the three months both before and after the introduction of random breath testing; 35 of the 50 evaluative references in the press appeared between October 1982 and March 1983. Overall, the largest number of these references were neutral (44%), with 36% negative and 20% positive. In fact, newspapers presented a more evenly balanced evaluative picture on this issue than on any other, except for the political costs issue which was also interwoven with the .05 versus .08 debate (Table 2.7). Editorially, several newspapers supported the more stringent .05 limit, in line with the Premier's and George Paciullo's advocacy on the issue (for example, *Sydney Morning Herald*, 22 February 1983). Of the four editorials which discussed this issue, three were in favour of the .05 level and one was neutral. Opposition to the .05 level was reported in a number of articles, with the main sources being the clubs and hotels associations (for example, *Sydney Morning Herald*, 1 December 1982, and 26 February 1983) and the opposition political parties (for example, *Sydney Morning Herald*, 1 December 1982 and 18 February 1983). Moves by the clubs and hotels associations and The National Party to have the limit raised to .08 continued to be reported in the papers into 1984 (*Daily Telegraph*, 23 March 1984; *Daily Mirror*, 10 May 1984).

*Efficiency of police.* The only other issue to generate more negative (36) than positive (27) evaluative references was the efficiency of the police operation of random breath testing. References to this topic were also concentrated in the first six months of random breath testing but were distributed more evenly over the whole period than was the case for the issues of civil liberties, .05 versus .08, and the impact on the liquor industry (see Appendix VII). The problems referred to involved equipment difficulties, operational mistakes and police dissatisfaction. Some dramatic front-page headlines were provided by equipment difficulties and faults ("Off the road! Great booze bus bungle", *Sun*, 30 April 1983), by police boredom ("Police bored with RBT–MP", *Sun*, 28 January 1983) and by reports of the inappropriate application of random breath testing ("B-Test stops funeral", *Sun*, 26 January 1983). On the positive side, a number of articles have presented positive evaluative references about improved police-public relations, including some letters to the editor.

*Summary*

In the two-year period from July 1982 to June 1984, 722 articles were published in the major metropolitan newspapers concerned with road safety, drink-driving and random breath testing. This represents an average of about one article per day over the two years. In both years, media interest, as measured by the number of articles and the total space given to these articles, was highest around the Christmas-New Year and Easter holiday periods, times renowned for their contribution to the road toll. The peak month for media coverage of random breath testing was in December 1982, the month in which it was introduced. The most common sources for these articles were government officials, George Paciullo or the Staysafe Committee, and the police.

The most common focus of interest in these articles was the evaluation of random breath testing, followed by the description of its operation. In turn, evaluation most frequently centred on the effects of random breath testing on the road toll, and the majority of these evaluations were positive. The peak of negative evaluations on this aspect occurred around Easter 1983 when the earlier acclaimed

success of random breath testing was tested by a higher than expected and hoped-for Easter road toll. Other issues evoking evaluation were the effects on drink-drive behaviour, on business, and on hospital and medical costs together with civil rights and police efficiency. The two issues — civil liberties and the effects on liquor-related businesses — which yielded the most negative evaluations received little attention beyond the first few months of random breath testing. In general, the evaluation of random breath testing tended to be positive or neutral rather than negative, especially after its introduction, although there was some increase in the frequency of negative evaluation in the first half of 1984.

## Country and Newcastle/Wollongong newspapers

In the one-year period from July 1983 to June 1984, the newspaper clipping service located 172 articles in country newspapers and 40 from newspapers in Newcastle and Wollongong dealing with drink-driving and random breath testing.

*Number, size and type of article*

As explained earlier, the country newspaper articles were drawn from the newspapers of one major town from each statistical district in the state. The number and size of these articles are shown in Table 2.8 for each town; the names of the newspapers are listed in Appendix VIII. The distribution of articles across towns was fairly even, apart from the small number in the Broken Hill papers (only 5).

The distribution of articles over the four quarters of the year is shown in Table 2.9, together with measures of their total size. In both the country and Newcastle/Wollongong, the greatest number of articles appeared in the last quarter of the period, from April to June 1984; this quarter included the Easter holiday period. Unfortunately, the one-year period did not include the early months of random breath testing so we cannot say whether the country coverage followed the same trend as the metropolitan papers of very high coverage during this period. In total, the space devoted to random breath testing and drink-driving was 3,621 column centimetres in country newspapers and 737 in Newcastle/Wollongong; headline space was respectively, 6,037 and 1,713 square centimetres. Illustrations were relatively rare in these articles, appearing in only 7.6% of country articles and 12.5% of articles in Newcastle/Wollongong, compared with 27.8% of articles in the major metropolitan newspapers.

Like the metropolitan newspaper articles, the majority of articles were news stories: 164 or 95.3% in the country and 37 or 92.5% in Newcastle and Wollongong. But editorials and letters to the editor constituted a smaller proportion of articles in country than in metropolitan newspapers (only 7 of the 172 country articles were editorials and only 2 of the 40 articles in Newcastle/Wollongong newspapers were editorials).

The placement or page number of country articles was known for about 90% of articles in both the country and Newcastle/ Wollongong, a higher proportion than for the metropolitan newspaper articles (about 70%). As with the metropolitan papers, a large proportion of the articles (63.5% in the country and 47.5% in Newcastle/Wollongong) appeared on the second to fifth pages of the newspaper. There were, however, fewer front-page articles; only 7 (4.1%) country articles appeared on the front page of the newspaper. The figure was equally low for Newcastle/Wollongong (2, 5.0%) compared with 10% for the major metropolitan newspapers.

**Table 2.8 Number and size of articles by town**

| Town* | Number of articles | | Text (col. cms.) | Headline (sq. cms.) | Illustration (sq. cms.) | Readership** |
|---|---|---|---|---|---|---|
| | No. | % | | | | |
| Albury | 26 | 15.1 | 502.0 | 1,068.0 | 660.0 | 26,000 |
| Armidale | 19 | 11.0 | 396.0 | 528.0 | 0.0 | 14,000 |
| Broken Hill | 5 | 2.9 | 93.0 | 102.0 | 0.0 | 8,160 |
| Dubbo | 17 | 9.9 | 253.0 | 640.0 | 0.0 | 8,753 |
| Goulburn | 12 | 7.0 | 232.0 | 204.0 | 0.0 | 6,150 |
| Grafton | 18 | 10.5 | 357.0 | 626.0 | 489.0 | 7,210 |
| Griffith | 25 | 14.5 | 705.0 | 801.0 | 0.0 | 4,257 |
| Lismore | 12 | 7.0 | 339.0 | 555.0 | 22.0 | 22,005 |
| Orange | 19 | 11.0 | 361.0 | 535.0 | 157.0 | 8,500 |
| Tamworth | 19 | 11.0 | 383.0 | 978.0 | 60.0 | 12,983 |
| TOTAL | 172 | 99.9 | 3,621.0 | 6,037.0 | 1,388.0 | 118,018 |
| Newcastle | 19 | 47.5 | 353.0 | 836.0 | 121.0 | 157,863 |
| Wollongong | 21 | 52.5 | 384.0 | 877.0 | 250.0 | 38,457 |
| TOTAL | 40 | 100.0 | 737.0 | 1,713.0 | 371.0 | 196,320 |

* Names of newspapers are shown in Appendix VIII.
** Source of readership figures: Margaret Gee's Media Guide (1985).

**Table 2.9 Number and size of articles by quarter of year**

| | Country | | | | | Newcastle/Wollongong | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of articles | | Text | Headline | Illustration | Number of articles | | Text | Headlines | Illustration |
| | No. | % | (col. cms.) | (sq. cms.) | (sq. cms.) | No. | % | (col. cms.) | (sq. cms.) | (sq. cms.) |
| *1983* | | | | | | | | | | |
| Jul-Sep..... | 23 | 13.4 | 545 | 843 | 22 | 7 | 17.5 | 172 | 283 | 280 |
| Oct-Dec..... | 42 | 24.4 | 852 | 1,283 | 447 | 6 | 15.0 | 130 | 296 | 54 |
| *1984* | | | | | | | | | | |
| Jan-Mar ..... | 40 | 23.3 | 765 | 1,250 | 0 | 10 | 25.0 | 130 | 246 | — |
| Apr-Jun ..... | 67 | 38.9 | 1,459 | 2,661 | 919 | 17 | 42.5 | 305 | 888 | 37 |
| TOTAL | 172 | 100.0 | 3,621 | 6,037 | 1,388 | 40 | 100.0 | 737 | 1,713 | 371 |

*Source of articles*

A total of 190 sources were cited in the 172 country articles and there were 47 sources in the 40 articles in the Newcastle and Wollongong newspapers. The courts were by far the most frequently cited source in the country newspapers, being cited in 61.6% of articles; the police came next, but were cited in only 27.9% of articles (Table 2.10). The pattern for the Newcastle/Wollongong articles was more similar to that shown by the major metropolitan newspaper articles, with the police (40% of articles), government officials (30%) and the courts (25%) constituting the most common sources.

*Content of articles*

Table 2.11 shows the number of occasions on which a general content category was a secondary or a main issue, together with the number of articles in which each was a main issue. The most frequently referred to general categories were also further broken down to show their most common specific issues.

The two general content areas which drew most attention in the country newspaper articles were "descriptions of random breath testing" (72 articles, 41.9%) and "other related topics" (95 articles, 55.2%). Nearly all of these articles were concerned with court reports for drink-driving offenders and descriptions of police operations and planned blitzes. The reports of court hearings described the routine details of the hearings, including the nature and circumstances of the offence, how the offender was apprehended (by random breath testing in 32 articles and by non-random means in 82 articles), and the penalties handed down. According to the comments of a number of country residents participating in the group discussion study (Elliott & Shanahan, 1983), the publication of one's name in the court reports of the local paper is one of the dreaded consequences of being caught drink-driving in country towns where "everyone knows everyone else". This situation is not peculiar to Australia. Martin and Webster (1971) reported that the publication of the names of people involved in court hearings in Britain is one of the social consequences of conviction.

While most of the articles dealt with routine cases (for example, "Cleaner fined on PCA charge" — Tamworth *Daily Leader*, September 1983, p.2) country newspaper headlines, like newspapers anywhere, tended to highlight the unusual cases for example, "Tia Maria turned man into bar-stripper" (*Griffith Area News*, November 1983, p.3) and "Horseman is saddled with drink-drive charge" (Dubbo *Daily Liberal*, November 1983, p.7).

The articles describing police operations (45 in the country, 13 in Newcastle/Wollongong) were mostly concerned with news of police blitzes on drink-drivers, especially, like the metropolitan papers, around the Easter and Christmas holiday periods.

*Evaluation*

Evaluative references to the effects of random breath testing were relatively rare in country newspapers. Whereas evaluation was the most common general content category for major metropolitan newspapers, it came a poor third in country newspapers, beaten in frequency by "descriptions of random breath testing", especially police operations, and court reports. Only 13 articles in country newspapers were primarily concerned with evaluative comment, and an additional 23 contained some evaluative discussion as a secondary issue. The situation for the

**Table 2.10 Number of sources by area**

| Source | Country | | Newcastle/ Wollongong | |
|---|---|---|---|---|
| | Freq. of source | % of articles | Freq. of source | % of articles |
| Police | 48 | 27.9 | 16 | 40.0 |
| Paciullo/Staysafe | 5 | 2.9 | 1 | 2.5 |
| Government | 12 | 7.0 | 12 | 30.0 |
| Political parties | 2 | 1.2 | 2 | 5.0 |
| Business associations | 6 | 3.5 | 3 | 7.5 |
| Community | 3 | 1.7 | 0 | 0.0 |
| Courts | 106 | 61.6 | 10 | 25.0 |
| N.R.M.A | 2 | 1.2 | 0 | 0.0 |
| Non-government associations | 1 | 0.6 | 0 | 0.0 |
| Hospitals/medical | 0 | 0.0 | 0 | 5.0 |
| Other | 5 | 2.9 | 1 | 2.5 |
| TOTAL | 190 source | 172 articles | 47 sources | 40 articles |

**Table 2.11 Number of references to issue by content category and type of reference**

| | Country | | | Newcastle/ Wollongong | | |
|---|---|---|---|---|---|---|
| | Main issue | Secondary issue | Total | Main issue | Secondary issue | Total |
| Problem addressed | 13 | 26 | 39 | 3 | 9 | 12 |
| Descriptions of RBT | 59 | 13 | 72 | 11 | 4 | 15 |
| • Police operations | 29 | 16 | 45 | 10 | 3 | 13 |
| • Court reports (RBT) | 29 | 3 | 32 | 1 | 0 | 1 |
| Evaluating RBT | 14 | 22 | 36 | 11 | 8 | 19 |
| Other related topics | 86 | 9 | 95 | 15 | 3 | 18 |
| • Court reports (non-RBT) | 79 | 3 | 82 | | | |

Newcastle/Wollongong papers was somewhat different, and more like the major metropolitan papers, with more articles concerned with evaluation than any other general topic.

When evaluative comments were made, they were more likely to be positive (38, 48.0%) or neutral (15, 19.0%) than negative (26, 32.9%). Most of the positive references (15 out of 38) concerned the effects on road safety; the negative references were related to the effects on alcohol-related businesses (9, 34.6%) and political and civil rights issues (5, 19.2%), as well as the .05/.08 debate (3, 11.5%). This is similar to the metropolitan pattern.

*Summary*

The country newspapers dealt with a more narrowly defined set of content areas and issues than the major metropolitan newspapers. Their two main areas of interest were court reports and descriptions of police operations in the region. Little attention was given to evaluative comment. Their interest in local events and local identities is to be expected because regional coverage is their main role. The major metropolitan papers are available and read in the country and provide the broader-based news outside the region. With the exception of the Newcastle/Wollongong newspapers, which are more like the major metropolitan "statewide" papers, the country newspapers are closer in role and orientation to the local metropolitan papers than to the major papers.

## SUMMARY

The public has been exposed to the joint issues of the road toll, drink-driving, and particularly random breath testing, by both the advertising campaign accompanying the enforcement effort and by the media coverage of the issues. The advertising campaign has been extensive, but concentrated on the Christmas and Easter holiday periods. In the early period, it focused on the threat of apprehension and arrest, with powerful advertisements using a slogan which has been repeated in various forms and built upon in later advertisements.

This government funded campaign has been strongly reinforced by media coverage of random breath testing and related issues. Together the two forms of publicity have resulted in a high level of community exposure to random breath testing by the media. This exposure, in turn, led to increased knowledge of the drink-drive laws (Job, 1983), especially knowledge about the legal limit. Surveys indicated a high level of awareness of random breath testing and strong recall of the original advertisement. One comment in the group discussions that "hardly a day goes by without seeing or hearing something about random breath testing" was probably quite true in the first six months of random breath testing (Elliott & Shanahan, 1983).

In this early period, most of the media discussion on random breath testing was positive, with acclamations of its success in reducing the road toll. One of the most effective publicists of random breath testing at this time and during the whole period that he was Chairman of the Staysafe Committee was George Paciullo. The other regularly cited sources in newspaper articles during the two-year period that was analysed were government officials and the police. This should hardly be surprising given the structured access to the media by those in positions within the bureaucracy (Chibnall, 1977; Gusfield, 1981).

In the six months before and in the six months after the introduction of random breath testing, the major metropolitan newspapers carried a considerable amount of evaluative comment on random breath testing. Prior to its introduction, this comment was fairly evenly balanced between the positive and the negative. The positive was concerned with the needed and hoped-for effects on the road toll while the negative was mostly related to civil liberties issues and the expected negative effects on liquor-related businesses. The first negative comments on the waning deterrent effect of random breath testing appeared around Easter 1983 in connection with the road toll figures. This concern and the opinion that the police had reduced their efforts were strong topics of discussion in the group discussion study several months later (Elliott & Shanahan, 1983). Although undoubtedly these issues deserve public discussion and debate, it raises the question of self-fulfilling prophecies and the extent to which the media reflect reality or help to create it.

In summary, however, the evaluation of random breath testing by the press has overall been more positive or neutral than negative. This was a consistent pattern for both country and metropolitan newspapers over the whole period analysed, although there was a trend towards more negative references in the first half of 1984.

## CHAPTER 3

# The Police Operation of Random Breath Testing in New South Wales

New South Wales was the first state or territory of Australia to introduce random breath testing, with a level of enforcement and resource allocation unprecedented in Australia and probably the world. While Victoria conducted some 18,300 breath tests in its first year of operation (Stewart, 1978), and over 528,000 tests in the 6½ years till the end of 1983 (Hendtlass, 1984), New South Wales conducted nearly 900,000 breath tests in its first year of operation and over 1.25 million tests in 1984. The New South Wales figures are much higher also than the figures in other countries (such as Sweden and France) where random breath testing operates. In Sweden, for example, over one million tests were conducted in the first 35 months of implementation (Snortum, 1984), about the same number as carried out in only 12 months in New South Wales.

Random breath testing in New South Wales is largely conducted by Highway Patrol personnel with some support in country areas from general duty police. The number of police officers involved in an operation may vary from two to six, and they work from a car or a bus. Immediately after the introduction of random breath testing, most operations in the metropolitan area were conducted from the six converted Urban Transport Authority buses in Sydney and two new "vans" in Newcastle and Wollongong. Country operations used cars. Since that time, there have been a number of changes. First, all Highway Patrol personnel (approximately 1,000) were directed to conduct random breath testing for a minimum of one hour on each shift. Second, 22 mini-buses or vans were purchased in mid-1984 and fitted out with the appropriate equipment for random breath testing, so providing each police district with the services of a bus or van. The third change also concerned equipment. Since 1983, the Alcotest tubes have been gradually replaced by electronic Alcometers which give a "stop-light" reading. A fourth change concerned the hours of operation. In mid-1984, testing in the early hours of the morning was increased to counter the avoidance behaviour of motorists who were staying out late hoping to avoid random breath testing.

The effects of these changes will be apparent throughout this chapter which deals with the first two years of operation of random breath testing in New South Wales. It describes the distribution of random breath tests over time and area, and the outcome of these tests in terms of drink-drive charges and so provides an update or extension of the earlier report (Cashmore & Vignes, 1984) which dealt with the first 12½ months of operation. Detailed statistics are available only for the first 18 months because, owing to the Bureau's limited resources, the data was not computer analysed after June 1984. The information available for the period June to December 1984 is limited to the number of tests conducted, the number of positive breath tests, and the number of low, medium and high PCA charges.

As in the earlier report, the weekly returns for metropolitan and country random breath testing operations provided by the Police Department contained the following information on a daily basis for each station:

(a) The location of each operation, including information on reasons for nil returns — e.g., rain, lack of staff, and other special duties;
(b) The start and finish time of each operation;
(c) The number of police officers involved;
(d) The type of vehicle used — bus or car;
(e) The number of breath tests conducted;
(f) The number of positive breath tests;
(g) The number of low, medium and high PCA charges.

Again, as in the earlier report, the statistics derived from these data fall into two main types — those dealing with the level and allocation of police resources and those concerned with the results of the deployment of those resources (for example, the number of breath tests conducted and the number of people charged as a consequence of those tests).

The data are presented on a quarterly basis from January 1983 and exclude the first two weeks of operation in December 1982. (Information on these two weeks is available in the earlier report.) The data are also combined to provide statistics on four main areas — the Sydney metropolitan area, Newcastle, Wollongong, and the country. Newcastle and Wollongong are separate rather than combined because SIROMATH'S analysis and modelling of the first 12½ months' data (McEntyre & Shaw, 1984; Cashmore & Vignes, 1984) found significant differences between these two areas. The Newcastle area, as in the previous report, includes random breath testing operations worked from Newcastle, Toronto and Wallsend. So also, the Wollongong area includes all operations which report to the Warilla Head Station, the base for Highway Patrol operations in the Wollongong District. Neither the Newcastle nor Wollongong areas referred to in this report include the whole of the Newcastle or Wollongong Police Districts.

*Operational resources*

The resources involved in the operation of random breath testing vary depending on the availability of personnel and vehicles, and they also vary over time in line with the changes outlined earlier in this chapter. The resources may range from a two-officer unit working from a car to a six-officer unit working from a bus and supported by cars and/or motor-cycles. The data provided by the Police Department concerning the deployment of resources involved in random breath testing include the following information:

(a) The number of random breath testing operations by area;
(b) The average duration of random breath testing operations;
(c) The total hours of operation;
(d) The type of vehicle used (car or bus);
(e) The number of police and the number of police-hours involved.

1. *Number of operations*

A random breath testing operation is defined as each occasion on which one or more police officers set up a random breath testing station on the roadside for a specified time. Table 3.1 shows the number of operations by quarter of the year and area for the 18-month period from 1 January 1983 to 30 June 1984.

**Table 3.1 Number of operations by quarter of the year and area**

| | Sydney | Newcastle | Wollongong | Country | Total |
|---|---|---|---|---|---|
| *1983* | | | | | |
| Jan-Mar | 2,240 | 166 | 203 | 1,579 | 4,188 |
| Apr-Jun | 2,532 | 273 | 253 | 3,153 | 6,211 |
| Jul-Sep | 2,796 | 361 | 358 | 3,848 | 7,363 |
| Oct-Dec | 2,562 | 247 | 355 | 3,835 | 6,999 |
| *1984* | | | | | |
| Jan-Mar | 2,681 | 203 | 331 | 4,386 | 7,601 |
| Apr-Jun | 3,697 | 313* | 320* | 5,459 | 9,789 |
| TOTAL | 16,508 | 1,563 | 1,820 | 22,260 | 42,151 |

* The number of operations in the September and December quarters of 1984 was, for Newcastle, 284 and 294, and for Wollongong, 347 and 308, respectively.

All four areas showed a substantial increase in the number of operations from the beginning of 1983 to the middle of 1984, with the biggest increase (of about 245%) in the country. In total, there were nearly 7,000 (6,991) more operations in the first half of 1984 than in the first half of 1983.

The majority (52.8%) of operations were conducted in the country, with 39.2% in Sydney, 4.3% in Wollongong and 3.7% in Newcastle. Although the number of operations in Newcastle and Wollongong was similar in most quarters of the year, Wollongong maintained a greater intensity of operations over the period from October 1983 to March 1984.

The number and percentage of operations which were bus-based is shown in Table 3.2 by quarter of the year and area.

**Table 3.2 Number and percentage of bus-based operations by quarter of the year and area**

| | Sydney | | Newcastle | | Wollongong | | Country | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| *1983* | | | | | | | | |
| Jan-Mar | 659 | 29.4 | 99 | 59.6 | 102 | 50.2 | 2 | 0.1 |
| Apr-Jun | 448 | 17.7 | 95 | 34.8 | 174 | 68.8 | 9 | 0.3 |
| Jul-Sep | 463 | 16.6 | 92 | 25.5 | 137 | 38.3 | 15 | 0.4 |
| Oct-Dec | 404 | 15.8 | 48 | 19.4 | 198 | 55.8 | 8 | 0.2 |
| *1984* | | | | | | | | |
| Jan-Mar | 300 | 11.2 | 38 | 18.7 | 204 | 61.6 | 2 | 0.0 |
| Apr-Jun | 920 | 24.9 | 125 | 39.9 | 152 | 47.5 | 20 | 0.4 |
| TOTAL/ AVERAGE | 3,194 | 19.3 | 497 | 31.8 | 967 | 53.1 | 56 | 0.3 |

The most marked change over time in the use of buses was the sharp increase in bus-based operations in all areas except Wollongong in the second quarter of 1984. Wollongong already had a consistently high rate of bus-based operations, averaging overall at 53.1% of operations. The increased use of buses in the other areas coincided with and resulted from the introduction of 22 new mini-buses in mid-1984, providing all Police Districts with the use of a bus. A check on the use of buses in the first two weeks of July, September and December 1984 indicated a substantial

and steady increase in the proportion of bus-based operations in Sydney from an average of about 29% of operations in early 1984 to about 45% in the two first weeks of September and December. There was a massive increase in the country from little or no bus use to about 22% of operations in September and December. Newcastle and Wollongong both showed a reduction in bus use in these weeks.

2. *Length of operation*

As indicated in the earlier report, the total number of hours of operation of random breath testing is probably the best available estimate of the amount of time that random breath testing is visible to the public. In addition to the people actually tested (and the passengers in cars where the driver is tested), people are exposed to random breath testing by driving past random breath testing stations. In the 18-month period to 30 June 1984, the total number of hours of operation of random breath testing across the state was 44,023 hours, an average of 2,445.7 hours per month or about 564 hours per week.

Figure 3.1 presents the total number of hours of operation by area and by quarter. As expected, the number of hours per quarter is consistent with the pattern shown by the number of operations. The most marked and steady increase across the six quarterly periods is for the country. All four areas show an increase in the April-June 1984 quarter.

Table 3.3 provides a further breakdown of these figures by operation-base (car or bus). The number of hours of bus-based operations is especially significant in view of buses' greater visibility and the public's identification (at least initially) of random breath testing with "booze-buses". Because operations using buses were generally longer than those using cars only (see Table 3.4), the hours of bus-based operations constitute a greater proportion of the total hours of operation than would be expected from the number of operations. For example, 62.0% of the total hours of operation in Wollongong were conducted by bus-based operations although only 53.1% of operations there were bus-based. Similarly, the figures for Sydney were 31.5% (hours) and 23.3% (operations), and for Newcastle, 40.4% (hours) and 31.8% (operations).

3. *Total number of police-hours*

A summary index of the level of police resouces allocated to random breath testing is provided by the total number of police-hours involved. The number of police-hours involved in each operation is defined by the duration of the operation (measured in hours) multiplied by the number of police officers working on the operation. Table 3.5 shows the total number of police-hours for each area over the six quarterly periods. The pattern of change over time is predictably very similar to the pattern for the total number of hours of operation (Figure 3.1). In 1983, over 79,000 police-hours were involved in random breath testing, with just on half of these in Sydney. A further 48,000 police-hours were involved in the first half of 1984, giving a total of over 127,000 police-hours for the first full 18-month period. At a conservative estimate of $12.50 per hour per officer, this represents a cost of about $1.58 million dollars in salary costs (RACV, 1984).

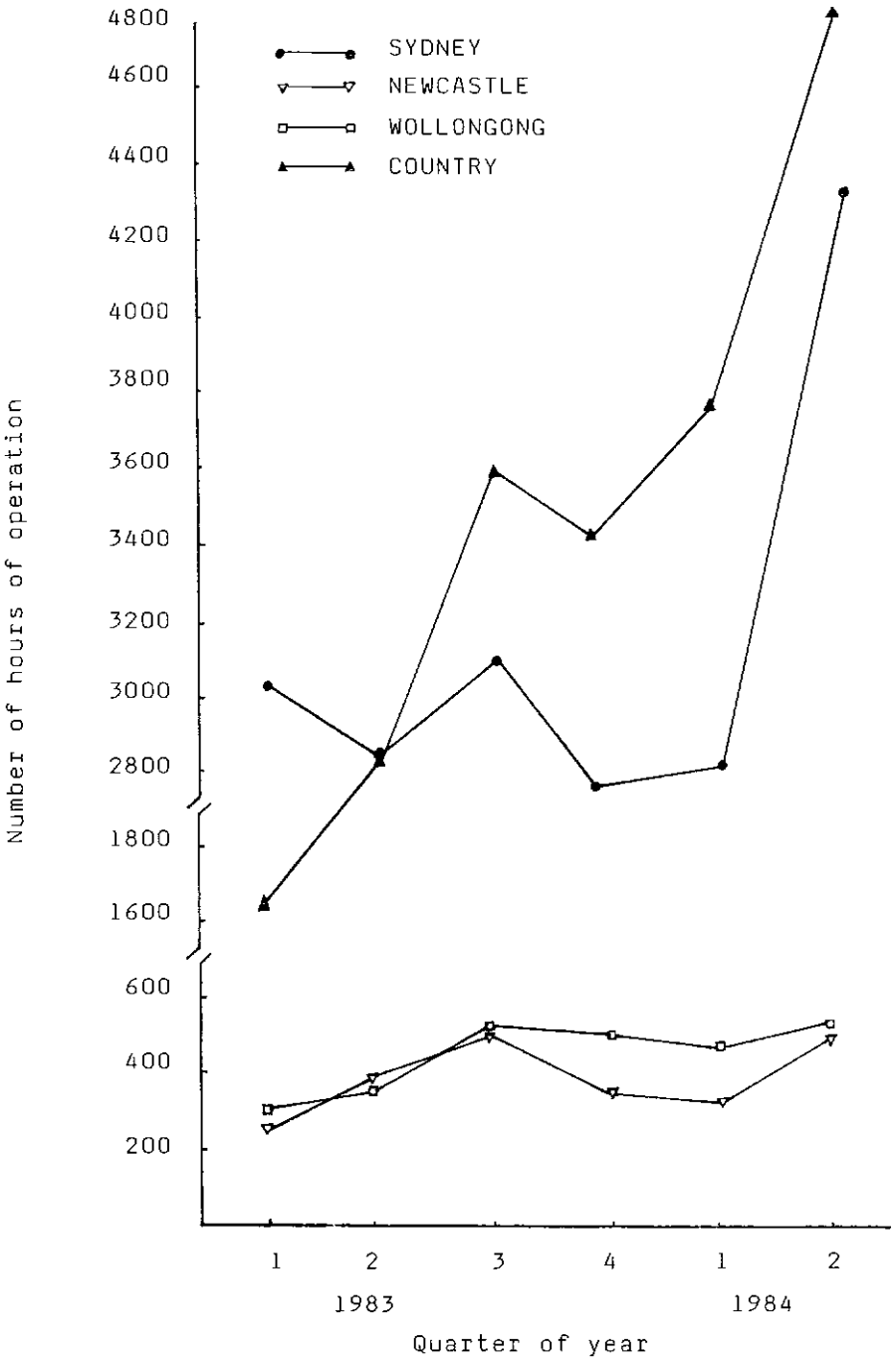



Figure 3.1 Total hours of operation by quarter of year and area

**Table 3.3 Total hours of operation per quarter by area and by operation-base**

| | Sydney | | | Newcastle | | | Wollongong | | | Country | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Car | Bus | Total | Car | Bus | Total | Car | Bus | Total | Car | Bus | Total |
| *1983* | | | | | | | | | | | | |
| Jan-Mar | 1,865 | 1,166 | 3,031 | 86 | 169 | 255 | 143 | 157 | 300 | 1,645 | 2 | 1,647 |
| Apr-Jun | 2,016 | 858 | 2,874 | 211 | 179 | 390 | 94 | 282 | 376 | 2,823 | 37 | 2,860 |
| Jul-Sep | 2,208 | 891 | 3,099 | 322 | 171 | 493 | 276 | 229 | 505 | 3,588 | 25 | 3,613 |
| Oct-Dec | 2,008 | 765 | 2,773 | 260 | 89 | 349 | 164 | 333 | 497 | 3,446 | 14 | 3,460 |
| *1984* | | | | | | | | | | | | |
| Jan-Mar | 2,218 | 583 | 2,801 | 229 | 88 | 317 | 124 | 338 | 462 | 3,762 | 4 | 3,766 |
| Apr-Jun | 2,688 | 1,706 | 4,394 | 249 | 222 | 471 | 200 | 294 | 494 | 4,749 | 47 | 4,796 |
| TOTAL | 13,003 (68.5%) | 5,969 (31.5%) | 18,972 (100.0%) | 1,357 (59.6%) | 918 (40.4%) | 2,275 (100.0%) | 1,001 (38.0%) | 1,633 (62.0%) | 2,634 (100.0%) | 20,013 (99.4%) | 129 (0.6%) | 20,142 (100.0%) |

**Table 3.4 Average length of operation (hours) by quarter of year, area and operation-base**

| | Sydney | | Newcastle | | Wollongong | | Country | |
|---|---|---|---|---|---|---|---|---|
| | Car | Bus | Car | Bus | Car | Bus | Car | Bus |
| *1983* | | | | | | | | |
| Jan-Mar | 1.18 | 1.77 | 1.29 | 1.71 | 1.41 | 1.54 | 1.04 | 0.88 |
| Apr-Jun | 0.97 | 1.92 | 1.18 | 1.89 | 1.19 | 1.62 | 0.99 | 4.18 |
| Jul-Sep | 0.95 | 1.93 | 1.20 | 1.85 | 1.25 | 1.67 | 0.94 | 1.69 |
| Oct-Dec | 0.93 | 1.89 | 1.30 | 1.86 | 1.04 | 1.68 | 0.90 | 1.77 |
| *1984* | | | | | | | | |
| Jan-Mar | 0.93 | 1.94 | 1.38 | 2.32 | 0.98 | 1.66 | 0.86 | 2.00 |
| Apr-Jun | 0.97 | 1.85 | 1.32 | 1.78 | 1.19 | 1.93 | 0.87 | 2.35 |
| OVERALL | 1.03 | 1.55 | 1.27 | 1.85 | 1.17 | 1.69 | 0.90 | 2.30 |

**Table 3.5 Number of police-hours by quarter of year and area**

| | Sydney | Newcastle | Wollongong | Country | Total |
|---|---|---|---|---|---|
| *1983* | | | | | |
| Jan-Mar..... | 11,782 | 1,160 | 1,570 | 4,937 | 19,449 |
| Apr-Jun..... | 9,120 | 1,417 | 1,527 | 6,871 | 18,935 |
| Jul-Sep ..... | 9,753 | 1,563 | 1,572 | 8,350 | 21,238 |
| Oct-Dec ..... | 9,086 | 1,209 | 1,462 | 8,025 | 19,782 |
| Total | 39,741 | 5,349 | 6,131 | 28,183 | 79,404 |
| *1984* | | | | | |
| Jan-Mar..... | 9,202 | 1,012 | 1,363 | 8,570 | 20,147 |
| Apr-Jun..... | 13,961 | 1,640 | 1,587 | 10,829 | 28,017 |
| Total | 23,163 | 2,652 | 2,950 | 19,399 | 48,164 |
| TOTAL | 62,904 | 8,001 | 9,081 | 47,582 | 127,568 |

*Distribution of breath tests*

Whereas the total number of hours of operation of random breath testing provides an estimate of the amount of time that random breath testing operations are visible to the public, the best available measure of *direct* exposure to random breath testing is the number of breath tests conducted. The number of breath tests provides the best estimate of the number of people breath tested. The two measures are not identical because an unknown number of people are likely to have been tested more than once.

In total, in the 24½ months from 17 December 1982 to 31 December 1984, about 2.2 million (2,216,214) random breath tests were conducted in New South Wales. When the two weeks of December 1982 are excluded, the total number of tests is 2,183,230. This figure is broken down by area as follows:

| | | |
|---|---|---|
| Sydney ..... | 1,120,037 | (51.3%) |
| Newcastle ..... | 126,899 | (5.8%) |
| Wollongong ..... | 148,717 | (6.8%) |
| Country ..... | 787,577 | (36.1%) |
| TOTAL | 2,183,230 | (100.0%) |

When expressed in terms of the number of licensed drivers in each area, in the two-year period there have been 14,090 tests for every 1,000 licensed drivers in Wollongong, 683 in Newcastle, 645 in Sydney, and 628 in the country. On these figures, Wollongong has had by far the highest level of exposure to random breath testing, measured at the aggregate level. Although the extent of exposure at the aggregate and the individual level of measurement (for example, the proportion of survey respondents who report that they have been tested) may be expected to be correlated, as Homel (1985) found, the translation from one level to another is problematic. The aggregate measure takes no account of the number of people tested more than once, nor of the relative timing and distance travelled by drivers; those driving more at night-time, for example, have a much greater chance of being tested than those who do most of their driving during the day. The aggregate measure is, however, a useful relative measure for comparing gross rates of exposure across areas.

1. *Number of tests*

The number of tests for each area, further broken down by quarter, is shown in Table 3.6 and Figure 3.2.

In all areas except Newcastle, there was a steady increase in the first year. The increased figures were maintained, apart from some fluctuations, in the second year. Only in Newcastle was the number of tests in 1984 less than the number for 1983 (a 12.9% decrease); this decrease was a result of the marked drop in the number of tests in the second half of 1984. Fewer tests were conducted in Newcastle in the last two quarters of 1984 than in any previous quarter, and although the figures were generally comparable for Newcastle and Wollongong, in these two quarters, Newcastle's tests constituted less than half of Wollongong's total. In contrast, the 1984 total for the country represented a 74.8% increase on the 1983 figure; the increase for Sydney and Wollongong was 37.6% and 30.7%, respectively. The considerable and steady increase in the number of tests conducted in the country is consistent with the pattern shown for the number of hours of operation shown in Figure 3.1; as expected, the number of tests conducted and the duration of operations were highly correlated, with an "r" value of about .70.

Table 3.7 shows the average number of tests per operation for car-based and bus-based operations by area. Consistent with the longer average duration of bus-based operations, the average number of tests was greater for bus-based than for car-based operations. Among car-based operations, the number of tests per operation varied from a low of 23.7 in the country to a high of 50.1 in Newcastle. As also noted in the earlier report, this difference is accounted for, to some extent, by differences in the average length of operation across areas (shortest in the country at 0.90 hours, longest in Newcastle at 1.27 hours).

Sydney, however, had a higher average number of tests per operation with shorter operations than Wollongong. The low number of tests per operation in the country is probably also a result of several other factors — lower traffic volume, fewer police per operation, and the need for operations to be moved more frequently in the country because their location is quickly communicated by the "bush telegraph" in country towns.

2. *Number of tests by day of the week*

Although the quarterly figures for the number of tests have been calculated for all four quarters of 1984, the breakdown by day of the week (and also by time of day) is available only for 1983 and the first two quarters of 1984. The total and average number of tests by day of the week and area are shown in Table 3.8. Figure 3.3 also shows the percentage of tests within each area by day of the week. Both indicate that the greatest number of tests were conducted in all areas on either Fridays or Saturdays. In Wollongong, however, the distribution of tests was more evenly spread across Thursdays, Fridays and Saturdays than in the other three areas. This pattern was quite consistent across all six quarterly periods.

3. *Number of tests by time of day*

The starting time of operations was grouped as follows:

(1) 6 a.m. to midday;
(2) midday to 6 p.m.;
(3) 6 p.m. to 10 p.m.;
(4) 10 p.m. to 6 a.m.

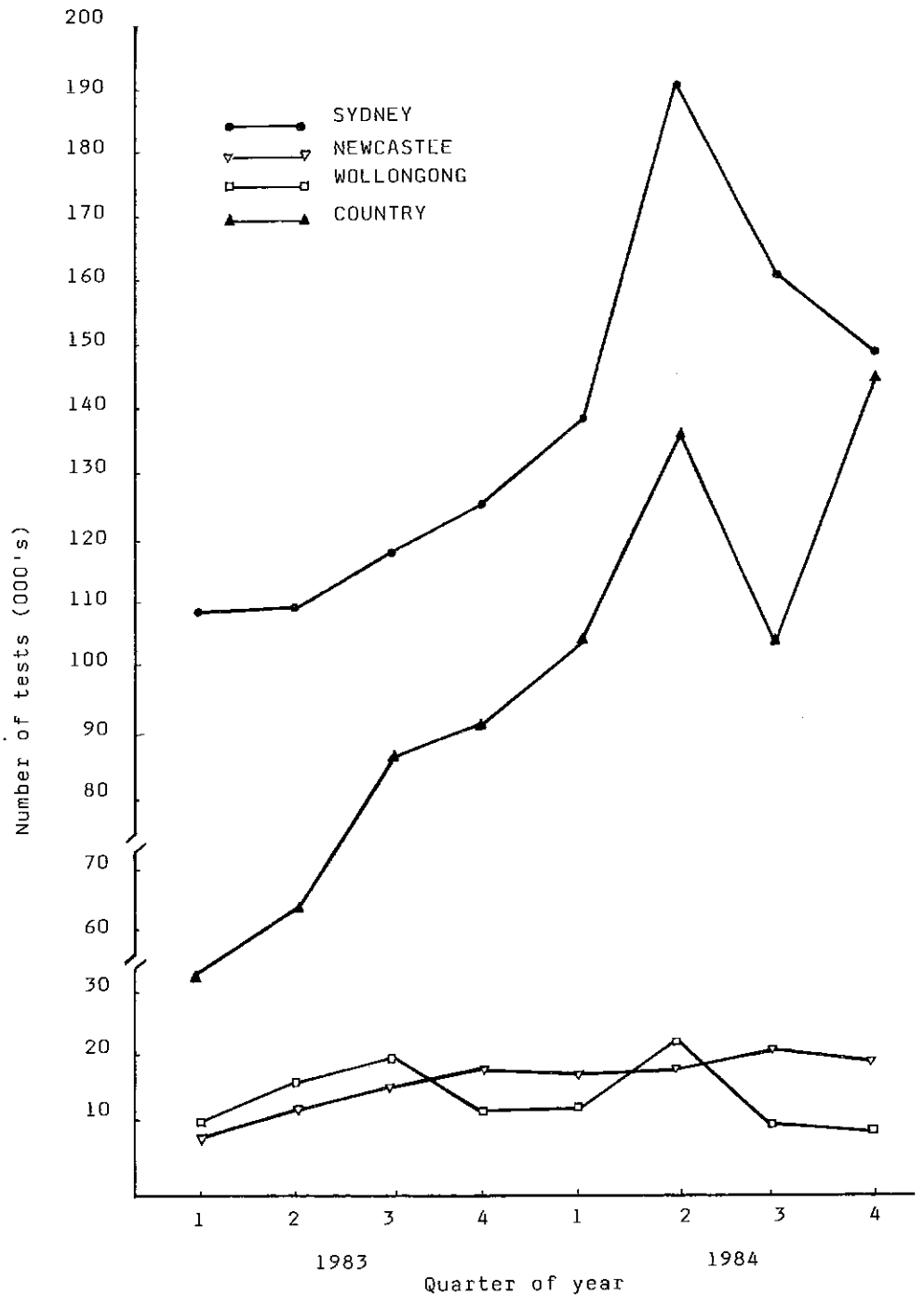



Figure 3.2 Number of tests by quarter of year and area

**Table 3.6 Number of tests by quarter of year and area**

| | Sydney | Newcastle | Wollongong | Country | Total |
|---|---|---|---|---|---|
| *1983* | | | | | |
| Jan-Mar | 111,133 | 12,263 | 10,634 | 37,895 | 171,925 |
| Apr-Jun | 111,895 | 18,984 | 14,516 | 66,548 | 211,943 |
| Jul-Sep | 120,480 | 22,583 | 18,521 | 88,500 | 250,084 |
| Oct-Dec | 127,882 | 13,988 | 20,797 | 93.669 | 256,336 |
| Total | 471,390 | 67,818 | 64,468 | 286,612 | 890,288 |
| *1984* | | | | | |
| Jan-Mar | 140,701 | 14,363 | 18,686 | 107,309 | 281,059 |
| Apr-Jun | 193,478 | 24,176 | 20,606 | 139,403 | 377,663 |
| Jul-Sep | 163,429 | 10,705 | 23,447 | 106,418 | 303,999 |
| Oct-Dec | 151,039 | 9,837 | 21,510 | 147,835 | 330,221 |
| Total | 648,647 | 59,081 | 84,249 | 500,965 | 1,292,942 |
| TOTAL | 1,120,037 | 126,899 | 148,717 | 787,577 | 2,183,230 |

**Table 3.7 Average number of tests per operation by area, operation-base and quarter of year**

| | Sydney | | Newcastle | | Wollongong | | Country | |
|---|---|---|---|---|---|---|---|---|
| | Car | Bus | Car | Bus | Car | Bus | Car | Bus |
| *1983* | | | | | | | | |
| Jan-Mar | 37.2 | 79.4 | 55.4 | 86.4 | 42.1 | 62.6 | 24.0 | 19.5 |
| Apr-Jun | 33.6 | 93.6 | 42.7 | 119.7 | 29.8 | 69.9 | 20.3 | 318.0 |
| Jul-Sep | 33.8 | 89.9 | 45.4 | 112.7 | 34.3 | 79.8 | 22.9 | 48.1 |
| Oct-Dec | 40.7 | 99.1 | 45.5 | 102.7 | 29.4 | 81.7 | 24.3 | 91.1 |
| *1984* | | | | | | | | |
| Jan-Mar | 44.5 | 115.8 | 55.4 | 137.6 | 25.8 | 75.5 | 24.4 | 61.0 |
| Apr-Jun | 41.5 | 85.0 | 62.0 | 100.1 | 32.8 | 99.3 | 25.3 | 102.1 |
| OVERALL | 40.8 | 75.0 | 50.1 | 106.6 | 32.4 | 78.7 | 23.7 | 116.4 |

**Table 3.8 Total and average number of tests by area and day of week for period 1 January 1983 to 30 June 1984**

| | Sydney | | Newcastle | | Wollongong | | Country | |
|---|---|---|---|---|---|---|---|---|
| | Total | Average* | Total | Average | Total | Average | Total | Average |
| Sunday | 79,312 | 1,016.8 | 12,720 | 163.1 | 13,185 | 169.0 | 61,467 | 788.0 |
| Monday | 105,572 | 1,353.5 | 12,341 | 158.2 | 12,019 | 154.1 | 70,682 | 906.2 |
| Tuesday | 102,780 | 1,317.7 | 13,112 | 168.1 | 12,512 | 160.4 | 64,983 | 833.1 |
| Wednesday | 97,767 | 1,253.4 | 11,162 | 143.1 | 12,836 | 164.6 | 63,832 | 818.4 |
| Thursday | 123,381 | 1,581.8 | 12,919 | 165.6 | 17,623 | 225.9 | 72,220 | 925.9 |
| Friday | 144,349 | 1,850.6 | 21,757 | 278.9 | 16,860 | 216.2 | 100,737 | 1,291.5 |
| Saturday | 152,408 | 1,929.2 | 15,046 | 190.5 | 18,725 | 240.1 | 99,403 | 1,258.3 |
| TOTAL | 805,569 | | 106,357 | | 103,760 | | 533,324 | |

* To calculate the average (i.e., average number of tests conducted on Sunday, Monday etc.), the total number of tests was divided by 79 for Saturday (79 Saturdays in the 18-month period) and by 78 for all other days of the week.

This particular grouping, which splits the night-time period from 6 p.m. to 6 a.m. into a four-hour and an eight-hour period was chosen because the time from 10 p.m. to 6 a.m. is noted for its high level of alcohol-involved crashes (McLean et al., 1980) and because the earlier report on random breath testing operations (Cashmore & Vignes, 1984) found that the majority of tests (from 56.1% to 68.3%, depending on area) were conducted between 7 p.m. and 10 p.m.

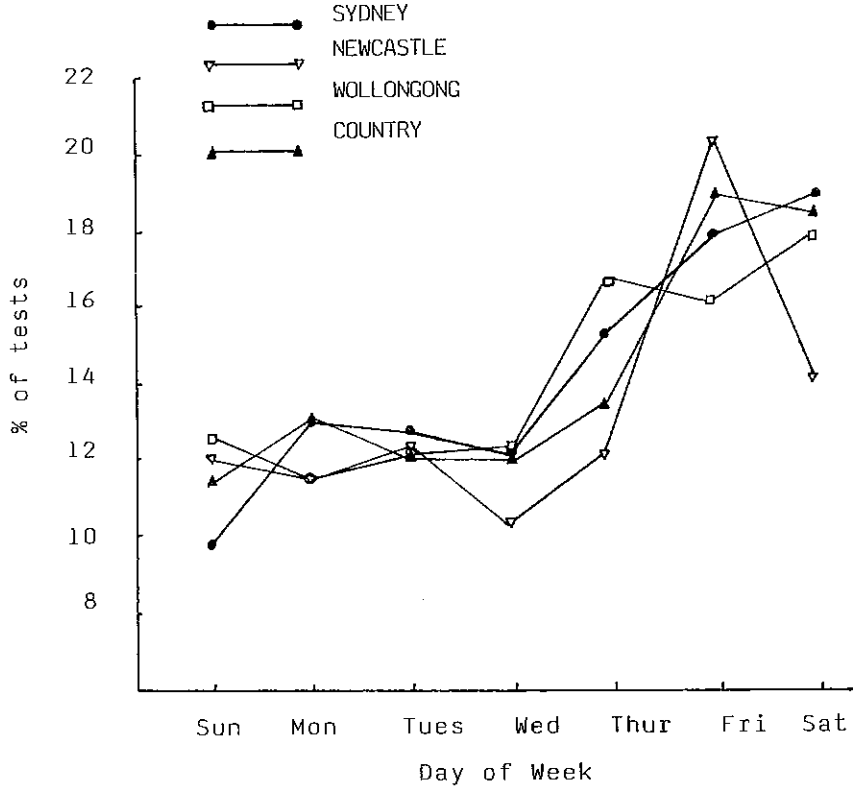



Figure 3.3 Number of tests by day of week as percentage of total tests in each area (for period 1 Jan 83-31 Dec 84)

Table 3.9 shows the number and percentage of tests by time of day for each of the four areas. Following the pattern noted in Cashmore and Vignes (1984) for the first 12½ months of random breath testing, more tests were conducted in the four hours between 6 p.m. and 10 p.m. than in any of the other longer time periods. Sydney had the highest proportion of tests (68.9%) during this period, and Wollongong the least (57.2%). Relatively more tests (28.6%) were conducted during the day (6 a.m. to 6 p.m.) in Wollongong than in any other area; in Sydney, the proportion was much lower at only 13.8%.

Although the pattern was marked and quite consistent across the six quarterly periods to June 1984, there is some indication that the percentage of tests between 6 p.m. and 10 p.m. dropped in the second quarter of 1984 (April-June) from higher levels in the previous quarters. In Sydney, for example, the percentage dropped from an average of 71.4% in the previous five quarterly periods to 61.1% in the

**Table 3.9 Number and percentage of tests by area and time of day***

| | Sydney | | Newcastle | | Wollongong | | Country | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| 6 a.m.-noon | 10,463 | 1.3 | 1,710 | 1.6 | 1,743 | 1.7 | 9,195 | 1.7 |
| Noon-6 p.m. | 99,740 | 12.5 | 20,135 | 19.2 | 25,676 | 26.9 | 96,414 | 18.2 |
| 6 p.m.-10 p.m. | 550,283 | 68.9 | 68,219 | 65.0 | 58,863 | 57.2 | 322,544 | 61.0 |
| 10 p.m.-6 a.m. | 138,430 | 17.3 | 14,830 | 14.1 | 14,594 | 14.2 | 100,789 | 19.1 |
| TOTAL | 798,916 | 100.0 | 104,894 | 99.9 | 102,876 | 100.0 | 528,942 | 100.0 |

* The starting time was unknown for 6,653 tests in Sydney, 1,463 in Newcastle, 884 in Wollongong, and 4,382 in the country.

June 1984 quarter; the corresponding figures for the other areas were 65.9% and 63.0% (Newcastle), 57.7% and 56.2% (Wollongong) and 63.2% and 54.7% (country). Calculations for the last two quarters of 1984 for Newcastle and Wollongong also indicate a marked increase in the percentage of tests in the 10 p.m.-6 a.m. period, a change recommended by Cashmore and Vignes (1984) in view of the low testing levels but high charge rates for these hours. In Newcastle, the percentage of *operations* for this night-time period increased from a low of 11.8% in the first quarter of 1984 to 34.2% of operations in the third quarter, and 38.4% of operations in the last quarter of 1984. The increase in Wollongong was less marked and later in the year, from 9.8% and 9.2% in the second and third quarters of 1984 to 22.1% of operations in the last quarter.

*Summary*

In the two-year period from 1 January 1983 to 31 December 1984, over two million random breath tests were carried out in New South Wales. More tests were conducted in 1984 (over 1.25 million) than in 1983 (0.9 million), an increase of 45.4%. In both years, the majority of tests were conducted in Sydney (52.9% of tests in 1983, and 50.2% in 1984).

The distribution of tests over the seven days of the week and over the hours of the day was not even. More tests were conducted on Fridays and Saturdays than on the other days of the week, although a high proportion of tests in Wollongong were also conducted on Thursdays. In terms of the four periods of the day specified, most tests were carried out between 6 p.m. and 10 p.m. A much smaller proportion of tests was carried out in the longer period from 10 p.m. to 6 a.m, hours well-known for their overrepresentation in statistics on alcohol-involved crashes.

*Operational outcomes*

So far, this section of the report, like the earlier report on police operation of random breath testing (Cashmore & Vignes, 1984), has concentrated on the allocation of police resources in the operation of random breath testing — for example, the number of operations, the total hours of operation and average duration, and the number of tests conducted.

The most obvious outcome of this allocation of resources is the number of people who have been charged with drink-driving offences as a result of random breath testing. The number of people charged as a proportion of the number tested (the *charge rate*) is the focus of this section. Although charge rates should be interpreted cautiously (a point that will be expanded upon later), the charge rate allows comparisons across areas and over time because it takes account of the number of people tested. In the absence of changes in policing, it provides a good *relative* measure of the level of drink-driving.

1. *Number of positive breath tests and the number of charges*

As indicated earlier, a driver tested at a random breath testing station is subject to an initial breath test with an Alcometer or Alcotest "bag". If this test proves positive (i.e., indicates a blood alcohol concentration (BAC) at or greater than .05), the driver is required to undergo breath analysis. If this yields a reading of .05 or more, the driver is charged with a PCA offence at one of three levels — low (.05-.079), medium (.08-.149) or high (.15 and over).

The number of drivers who failed the initial breath test (positives) and the number who were finally charged are shown in Table 3.10. The proportion of drivers who failed the initial breath test and were finally charged represents the "true positives" and this proportion is also shown in Table 3.10. Those who failed the first test but passed breath-analysis and so were not charged are "false positives"; the proportion of "false positives" is calculated by taking the percentage of "true positives" from 100%.

The overall proportion of positives resulting in charges was 73.7% in 1983, and 79.6% in 1984. In all four areas, the proportion of "true positives" increased from 1983 to 1984, probably as a result of the increasing use of Alcometers, which give a more reliable result than the "colour change" test involved in using Alcotest "bag" tests.

2. *Charge rates*

The number of charges shown in Table 3.10 is unsuitable for comparative purposes because it takes no account of the level of enforcement; an increase in the number of charges would be expected, for example, if the number of tests was increased. Charge rates, defined as the number of people charged as a percentage of the number of tests conducted, were therefore calculated.

In 1983, 5,348 charges were laid for PCA offences, comprising 0.60% of tests conducted (i.e., 6 out of every 1,000 tests resulted in a charge). In 1984, there were 5,096 charges, resulting in a charge rate of 0.39%. These figures may be further broken by area, quarter of the year, month, day of the week, and time of day.

(a) *By area and by quarter of the year.* Table 3.11 shows the charge rate by quarter of year for the two-year period for each of the four areas. The number of tests and the number of charges used to calculate these rates have been presented earlier in Tables 3.6 and 3.10, respectively.

The most noticeable feature of the results in Table 3.11 is the generally lower charge rates in 1984 than in 1983, as expected from the overall rates reported earlier for the two years. The most marked drop in charge rates was for Wollongong, and the least marked for Newcastle. The charge rate for Newcastle in the last quarter of 1984 was conspicuously high — considerably higher than for any previous quarter or any other area. The most likely explanation for this is the substantial increase in the number of operations conducted in Newcastle in this quarter between 10 p.m. and 6 a.m., hours noted for the prevalence of drink-driving (McLean et al., 1980); the percentage of operations between 10 p.m. and 6 a.m. increased in Newcastle from 11.8% in the first quarter of 1984 to 38.4% in the last quarter. Because of the very high charge rate (1.55%) in the last quarter, Newcastle had the highest rate of the four areas in 1984, but the country had the highest rate in 1983.

What do these variations in charge rate over time (quarter of the year) and across areas mean? It is likely that such changes are the result of a complex combination of a number of factors — for example, the extent of drink-driving in the community (especially in association with public holiday periods and local events such as festivals and shows), the level of police enforcement (for example, the specific location, timing, and number of random breath testing operations) and the success with which people are able to avoid random breath testing units. However, there is some hope of disentangling these factors if it is assumed that changes in the charge rate are likely to reflect changes in the extent of drink-driving if there are

**Table 3.10 Number of positive breath tests, number of charges and percentage of positives leading to charges by area and quarter of year**

| | Sydney | | | Newcastle | | | Wollongong | | | Country | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. of positive breath tests | No. of charges | % of positives charged | No. of positive breath tests | No. of charges | % of positives charged | No. of positive breath tests | No. of charges | % of positives charged | No. of positive breath tests | No. of charges | % of positives charged |
| *1983* | | | | | | | | | | | | |
| Jan-Mar | 730 | 444 | 60.8 | 88 | 70 | 79.5 | 130 | 81 | 62.3 | 487 | 336 | 69.0 |
| Apr-Jun | 744 | 553 | 74.3 | 152 | 116 | 76.3 | 69 | 48 | 69.6 | 748 | 626 | 83.7 |
| Jul-Sep | 904 | 654 | 72.3 | 116 | 82 | 70.7 | 62 | 52 | 83.9 | 775 | 623 | 80.4 |
| Oct-Dec | 1,115 | 788 | 70.7 | 184 | 145 | 78.8 | 80 | 63 | 78.8 | 869 | 667 | 76.8 |
| Total | 3,493 | 2,439 | 69.8 | 540 | 413 | 76.5 | 341 | 244 | 71.6 | 2,879 | 2,252 | 78.2 |
| *1984* | | | | | | | | | | | | |
| Jan-Mar | 982 | 716 | 72.9 | 85 | 60 | 70.6 | 63 | 46 | 73.0 | 772 | 611 | 79.1 |
| Apr-Jun | 781 | 607 | 77.7 | 77 | 59 | 76.6 | 33 | 23 | 69.7 | 575 | 481 | 83.7 |
| Jul-Sep | 647 | 553 | 85.5 | 60 | 47 | 78.3 | 28 | 21 | 75.0 | 501 | 428 | 85.4 |
| Oct-Dec | 802 | 627 | 78.2 | 173 | 152 | 87.9 | 46 | 37 | 80.4 | 777 | 628 | 80.8 |
| Total | 3,212 | 2,503 | 77.9 | 395 | 318 | 80.5 | 170 | 127 | 74.7 | 2,625 | 2,148 | 81.8 |
| TOTAL | 6,705 | 4,942 | 73.7 | 935 | 731 | 78.2 | 511 | 371 | 72.6 | 5,504 | 4,400 | 79.9 |

no changes in police activity. For this reason, it is important to analyse changes in the number and distribution of tests over the week and over the day in the context of changes in the charge rate.

**Table 3.11 Charge rate (%) by area and quarter of year**

| | Sydney | Newcastle | Wollongong | Country |
|---|---|---|---|---|
| *1983* | | | | |
| Jan-Mar | 0.40 | 0.57 | 0.76 | 0.89 |
| Apr-Jun | 0.49 | 0.61 | 0.33 | 0.94 |
| Jul-Sep | 0.54 | 0.36 | 0.28 | 0.70 |
| Oct-Dec | 0.62 | 0.71 | 0.30 | 0.71 |
| OVERALL | 0.52 | 0.61 | 0.38 | 0.79 |
| *1984* | | | | |
| Jan-Mar | 0.51 | 0.42 | 0.25 | 0.57 |
| Apr-Jun | 0.31 | 0.24 | 0.11 | 0.35 |
| Jul-Sep | 0.34 | 0.44 | 0.10 | 0.40 |
| Oct-Dec | 0.42 | 1.55 | 0.17 | 0.42 |
| OVERALL | 0.39 | 0.54 | 0.15 | 0.47 |

Statistical analysis of the 1983 data on police operations (Cashmore & Vignes, 1984; McEntyre & Shaw, 1984) showed that time of the day was a highly significant factor in models explaining the variation in the charge rate. Since the highest charge rates occurred between 10 p.m. and 4 a.m. or 6 a.m. in all areas (Cashmore & Vignes, 1984), the overall quarterly charge rate for each area was plotted together with the percentage of operations conducted in each quarter within these hours (Figure 3.4). As Figure 3.4 shows, the pattern for the two sets of graphs match well, though not perfectly, indicating a good relationship between the overall charge rate and the proportion of operations conducted during the high risk hours. In fact, the relationship is surprisingly strong in view of the number of other factors that are likely to affect the charge rate. It seems then that the significance of the time of day as a factor affecting the charge rate, so clearly established for the 1983 data, continues in the 1984 data.

(b) *By day of the week.* Figure 3.5 shows the charge rate by day of the week over the whole 18-month period for each of the four areas. The pattern is similar to that shown by the 12½-month data for 1983, and again is similar across all areas, with a peak in the charge rate on Fridays and Saturdays and a mid-week low. Once again, while only about 36% to 38% of tests were conducted on Fridays and Saturdays, these two days together contributed the majority of charges in each area (Newcastle, 64.1%; Sydney and Wollongong, 57.5%; country 55.4%). The charge rate by day of the week was also further broken down by quarter of the year to study the stability of this pattern across quarterly periods (Figure 3.6). As Figure 3.6 shows, there was considerable variation over the six quarters for all areas except the country, where the pattern for the six graphs was quite similar. The lack of similarity across quarterly periods was most marked for Newcastle and Wollongong.

(c) *By time of the day.* The overall charge rate for the 18- month period by time of day is shown in Figure 3.7. In each of the four areas, the charge rate for the hours between 10 p.m. and 6 a.m. is higher than for any other time of the day. The lowest charge rate occurred in the morning hours between 6 a.m. and midday in all areas except Wollongong; in Wollongong, the lowest rate was the other day-time period between midday and 6 p.m. The disproportionately high number of charges for the

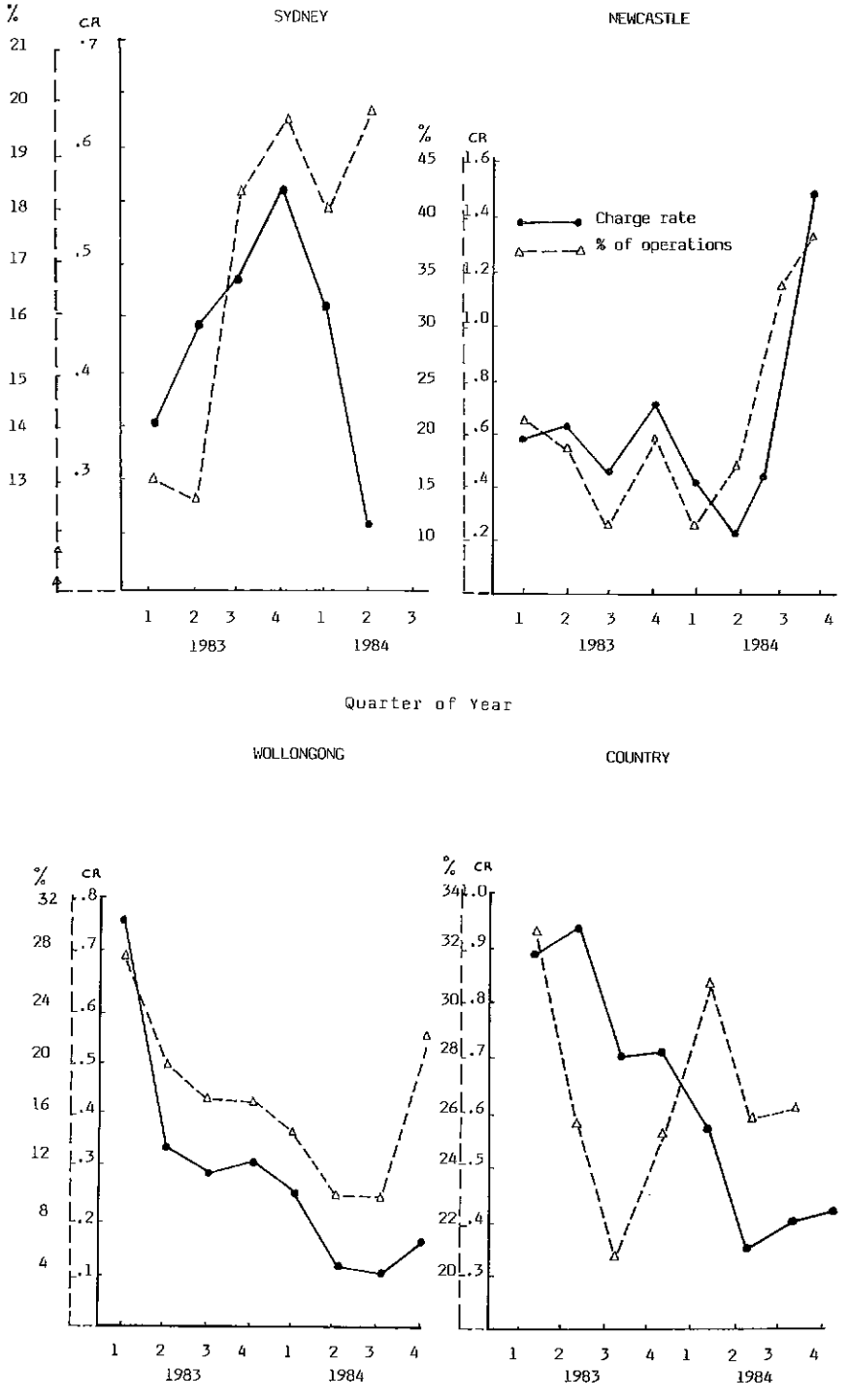



Figure 3.4. Charge rate and percentage of operations by quarter of year and area

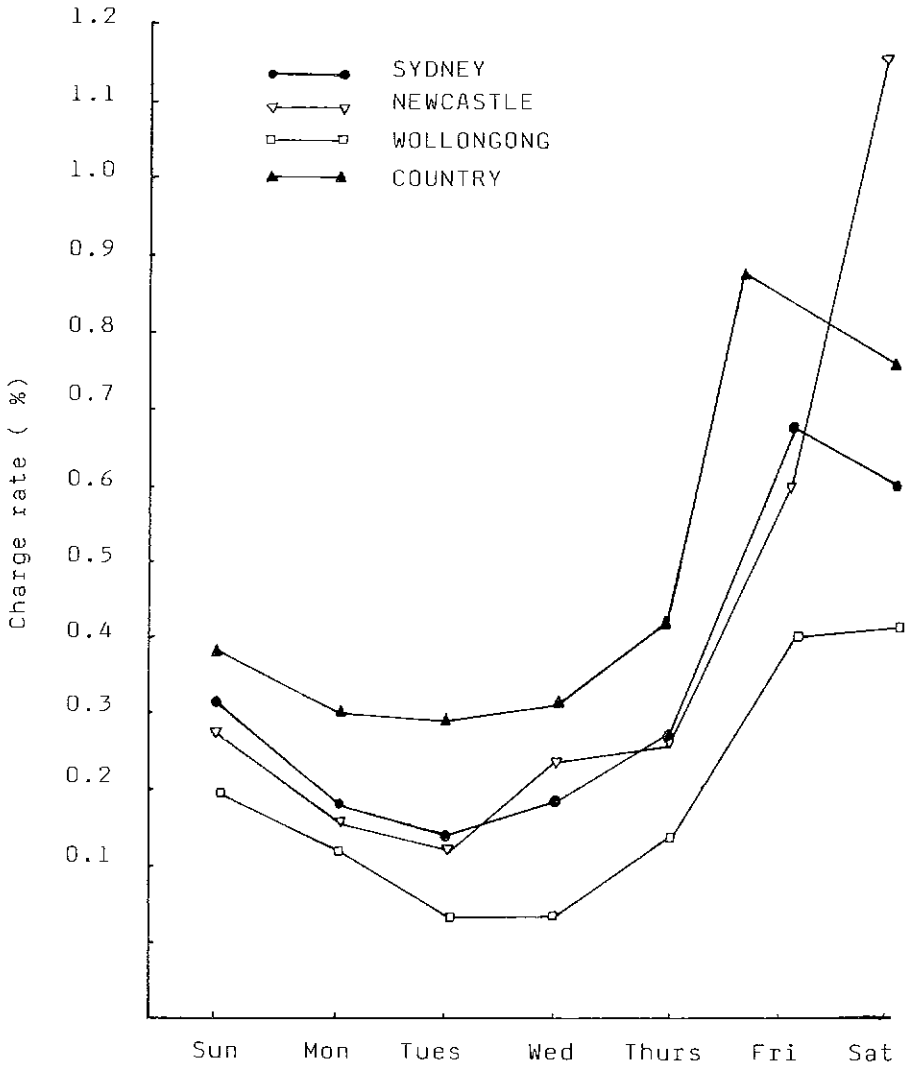



Figure 3.5. Charge rate by day of week (over 18 months) and area

10 p.m. to 6 a.m. period is further demonstrated by a comparison of the proportion of tests and the proportion of charges occurring in these hours. Whereas only about 16% of tests were conducted during this time, 36-43% of charges resulted from these tests (Newcastle, 43.0%; Sydney, 42.4%; Wollongong, 38.5%; country, 36.7%). Although there was some variation, this pattern was substantially maintained over the six quarterly periods from January 1983 to June 1984 (Figure 3.8). Wollongong showed the most variation from this pattern, with higher charge rates between 6 a.m. and noon than for any other time of the day in three of the six quarterly periods. There was not, however, a greater number of operations in Wollongong at this time of day.

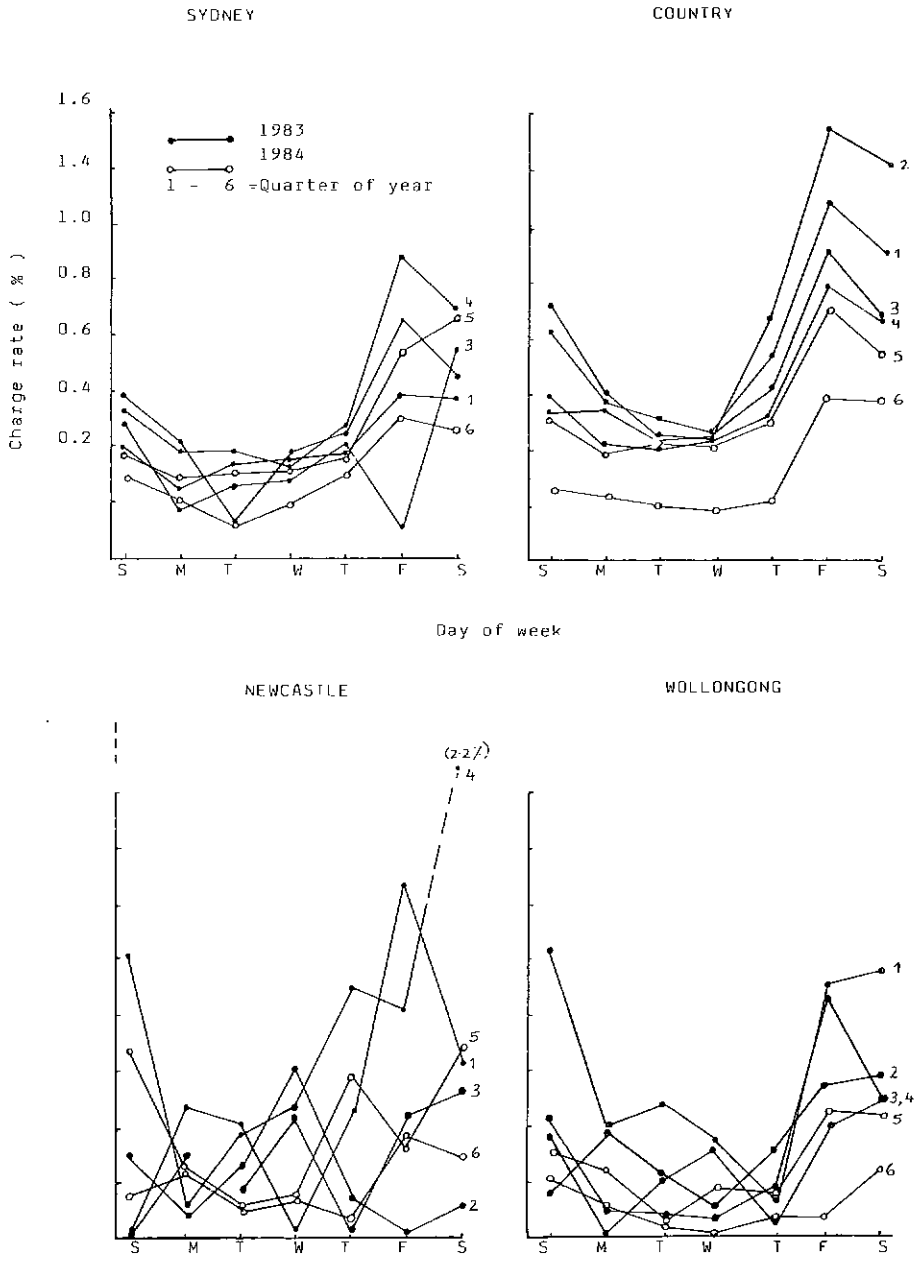



Figure 3.6. Charge rate by day of week, quarter of year and area

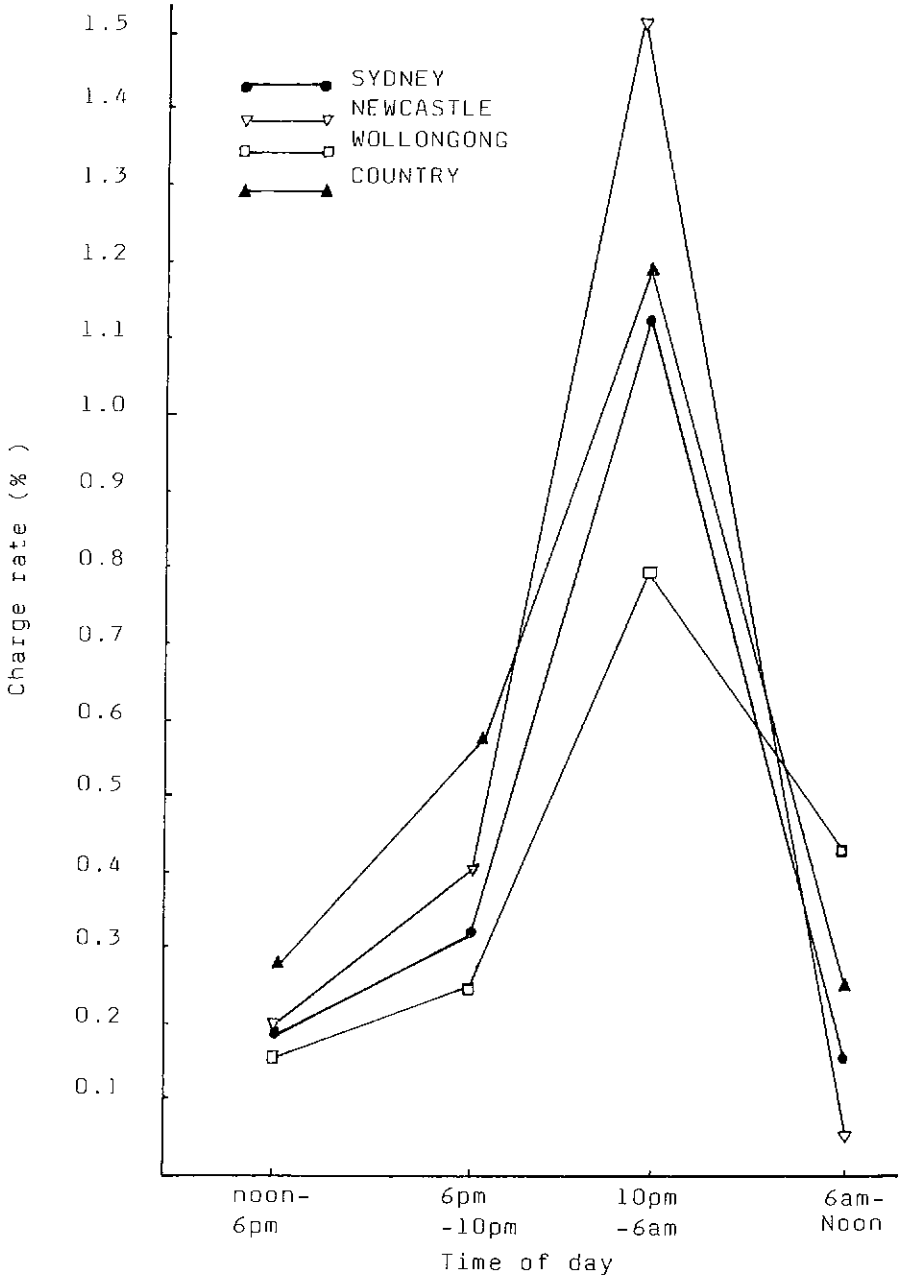



Figure 3.7. Charge rate by time of day and area for 18-month period

3. *Nature of the offence: low, medium and high PCA charges*

The specific PCA charge facing a driver with an illegal blood alcohol concentration (at or over .05) depends on the reading obtained by breath-analysis. A reading of .05 to .079 results in a low PCA charge; a reading of .08 to .149 leads to a medium PCA charge, and a high PCA charge follows a reading of .15 and above. The severity of penalty is graded accordingly.

The last section dealt with *overall* charge rates, but this section is concerned with the *type* of charge and whether or not the general drop in charge rates from 1983 to 1984 was evenly distributed across all three levels of offence. Figure 3.9 plots the charge rates for low, medium and high charges by quarter of the year. For each quarter, the numbers of low, medium and high charges are divided by the number of tests conducted in each quarter. If there is no change over time in the distribution of charges by type (low, medium and high), the three graphs within each area should be parallel and follow the pattern for the overall charge rate, shown in Figure 3.4. The rise in the medium charge rate for Sydney, for example, between the second and the last quarter of 1983 indicates that the rise in the overall charge rate during that time was mostly accounted for by an increase in *medium* charges. Similarly, the drop in the Sydney charge rate in 1984 was also mainly a result of a drop in the number of medium charges.

Comparing charge rates across areas, there are several notable features of the results:

(1) Sydney had the most stable charge rates over time (except perhaps for the change in medium charges) and Newcastle the most variable;

(2) Both Sydney and Newcastle had peaks in all three types of charge (especially the medium) in the last quarter of each year, unlike Wollongong and the country. These peaks were especially marked in Newcastle;

(3) Wollongong and the country showed the most consistent downward trend in charge rates (except perhaps for the last quarter of 1984 in the country);

(4) In all areas except Wollongong, the graph for the medium charge rate was clearly separated from the other two graphs; in all areas, medium charges constituted about 50% of all charges, with a high of 57.9% in Newcastle for 1984 and a low of 46.3% in Wollongong for 1983.

In summary, the distribution of charges remained fairly constant over time, with medium charges in all areas comprising the largest share of charges and high charges the smallest share.

*Summary*

In the first two years of random breath testing in New South Wales, police conducted 2.18 million breath tests, constituting one test for every 1.5 licence holders. This compares with about 528,000 tests in Victoria in 7½ years of operation till the end of 1983, and about 159,000 in two years in South Australia. In Sweden and France, countries with comparable legislation for random breath testing, the number of breath tests was also considerably smaller than in New South Wales (Sweden, just over one million tests in 35 months, and about 335,000 tests in 18 months in France). In per capita terms, the difference is even more marked since New South Wales has a population of about 5.3 million compared with 8.3 million in Sweden and nearly 54 million in France.

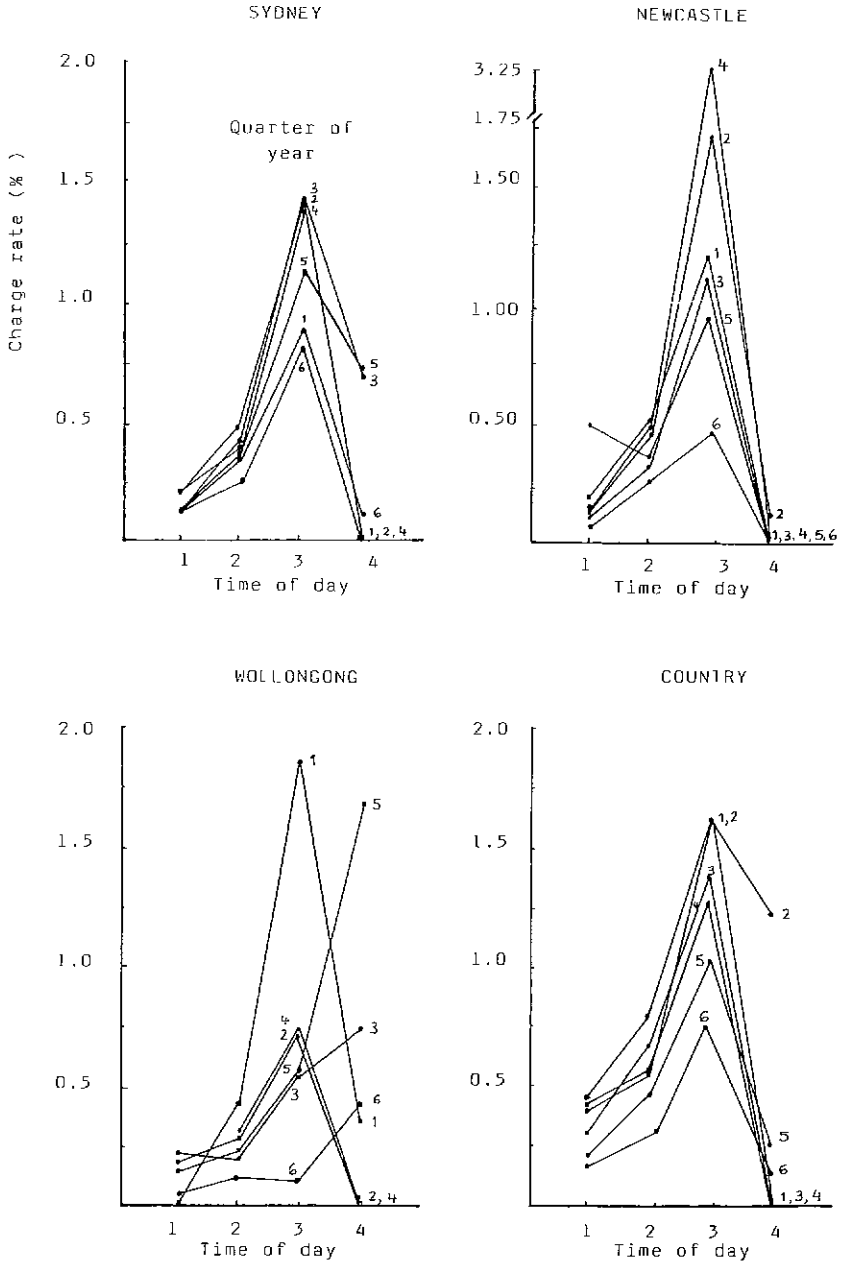



Figure 3.8. Charge rate by time of day, quarter of year and area
* (Time of day): (1) Noon-6pm; (2) 6-10pm; (3) 10pm-6am; (4) 6am-noon

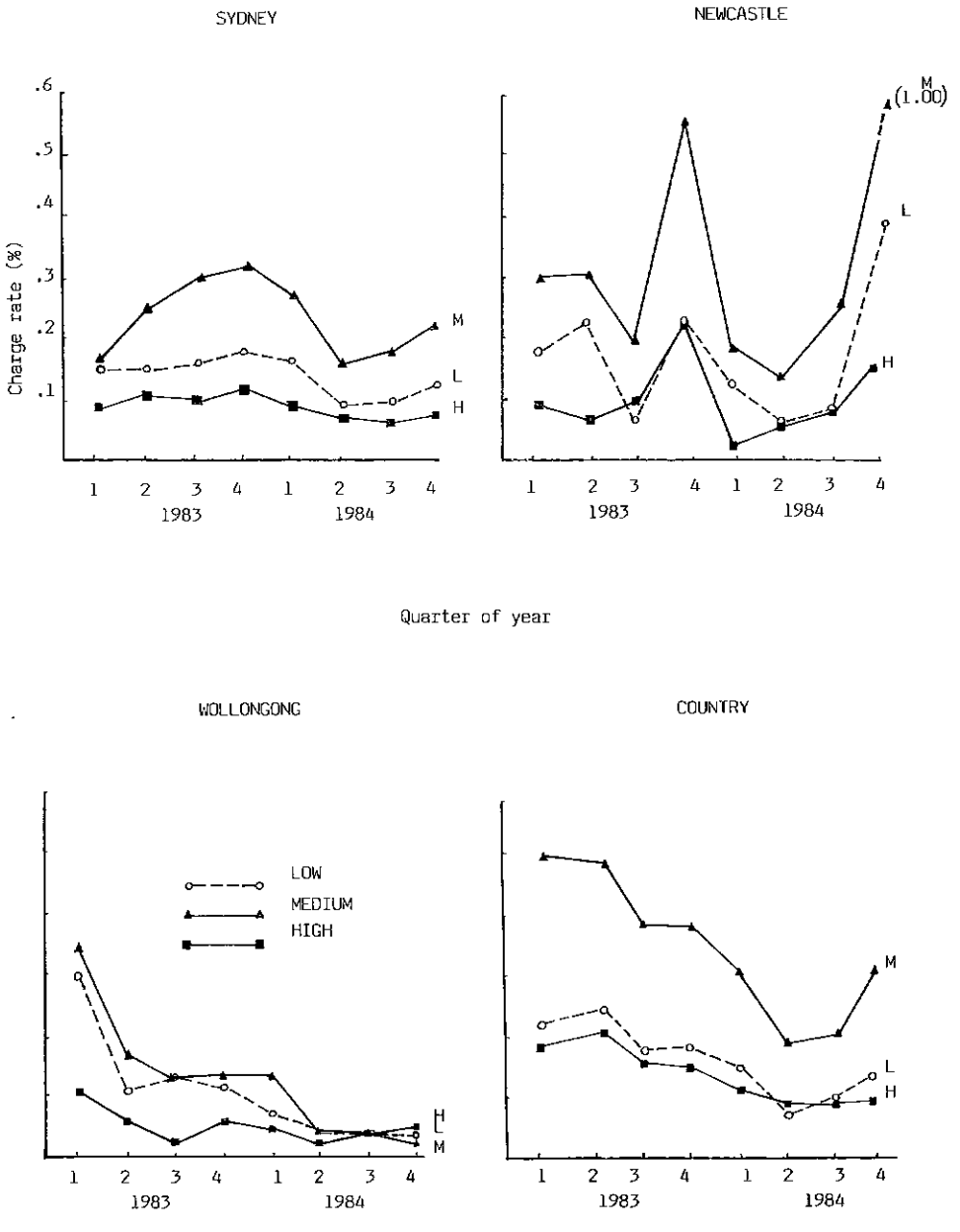



Figure 3.9.Charge rate for low, medium and high PCA charges by quarter of year and area

Although called "random" breath tests in New South Wales, these tests were not random in their distribution over time. The majority of tests were conducted between 6 p.m. and 10 p.m., and a greater number were carried out on Fridays and Saturdays than on the other days of the week. These are all times when people are most likely to be using their cars for social and recreational purposes involving alcohol. In *absolute* terms, these are also the times which yield the greatest number of charges, reflecting the contribution of policing levels to the amount of detected drink-driving. Fridays and Saturdays were also the days of the week which yielded the highest *relative* number of charges (as a proportion of the number of tests conducted). For time of the day, the highest charge rates occurred between 10 p.m. and 6 a.m., although only a small proportion of tests were conducted during these hours.

To what extent is the charge rate or the number of people charged with drink-driving offences following random breath testing a useful measure for evaluating the operation of random breath testing? As indicated earlier, the number of people detected and charged probably reflects a complex combination of factors, the three main ones being the level of policing, the incidence of drink-driving in the community, and the success with which people who have been drinking are able to avoid police attention — in this case at random breath testing stations. While the charge rate is a useful measure of the relative level of drink-driving (over time or across areas) in the absence of changes in police activity, neither the absolute number of people charged nor the charge rate is likely to be an accurate measure of the absolute amount of drink-driving in the community. Roadside surveys of drivers have generally found a higher percentage of drivers with illegal BACs than detected by police breath testing units. In Adelaide, for example, McLean, Holubowycz and Sandow (1980) found three to four times as many drivers with illegal BACs (.08 and above in South Australia) as were detected by police random breath testing units. Similar findings have also been reported for Victoria (Sloane & Huebner, 1980), Sweden (Goldberg, 1980; Jagefors, 1980) and the Netherlands (Noordzij, 1980). While the charge rates from police breath testing are generally lower than those yielded by roadside surveys, the two sets of charge rates are highly correlated. In both cases, charge rates were higher for weekends and for late night-early morning hours than for other times.

The most likely explanation for the overall discrepancy between the two sets of figures lies in avoidance behaviour. Because roadside surveys tend to be less visible and are concerned with detecting but not apprehending drink-drivers, drivers have less chance and less reason to avoid roadside survey sites than is the case for official police breath testing stations.

The issue of avoidance of random breath testing stations raises the thorny question of the balance between detection and deterrence. As Cameron and Sanderson (1982) point out, there is an inherent conflict between "the visibility of police enforcement aimed at general deterrence and the need to maintain the risk of detection" (p.ix). To function as an effective deterrent to drink-driving, random breath testing operations need to be highly visible and to operate at times (for example, between 6 p.m. and 10 p.m.) when *potential* offenders are likely to see them. This means, however, that they are not as effective as a means of detection because their high visibility makes them easier to avoid even though sites are generally selected to minimise the possibility of avoidance. The fact that random breath testing operates extensively early in the night when few people are drink-driving means that the charge rates tend to be low.

While it is important to maintain a high degree of visibility for random breath testing, it also needs to be perceived as having a real role in detection. As Cashmore and Vignes (1984) pointed out in the earlier report on police operations, "numerous highly visible random breath testing units are likely to have little deterrent effect on the driver who is about to drink if he/she believes that there will be very few units around on the way home later that night or early next morning" (p.53).

The real difficulty is that deterrence is harder to measure than detection; it is, by definition, harder to measure the rate at which people are *not* drink-driving (because they have been deterred from doing so) than the rate at which they are drink-driving (Gibbs, 1975). Charge rates, or better still, detection rates from roadside surveys provide a measurable rate of the incidence of drink-driving but, as pointed out earlier, there are problems associated with these rates. Although the number of people charged (or the number as a proportion of those tested) is one outcome of the operation of random breath testing units, it is doubtful whether it should be used as a measure of the effectiveness of random breath testing. It is inevitable that, given the large amount of resources invested in random breath testing (police-hours, tests conducted, equipment), there will be an expectation in some quarters that these resources should result in the detection of a substantial number of drink-drivers. Detection is, after all, the traditional role of the police. However, the main role of random breath testing is deterrence, not detection, and the methods used by police to apprehend drink-drivers prior to the introduction of random breath testing are still in operation. The relative contributions of the various methods now available to police to apprehend drink-drivers and an analysis of drink-driver offenders appearing before the courts are the subject of the next chapter.

## CHAPTER 4

# Apprehended Drink-Drive Offenders

With the introduction of random breath testing and the compulsory blood testing of road crash victims (aged 15 years and over and treated at or admitted to hospital), the number of methods available to police to detect and apprehend drink-drive offenders expanded from one to three.

The first method, in operation since July 1980 and still in force, will be referred to as "non-random" breath testing; it is utilized by mobile police patrols. The term "non-random" is applied because drivers breath tested in this way come to the attention of police by the manner of their driving, by committing a traffic offence or by involvement in an accident in which they are not injured seriously enough to require treatment at or admission to hospital. The second method of detection is via random breath testing, and the third is by compulsory blood testing of road accident victims, introduced at the same time as random breath testing. The third method extends the possibility of detection of drink-drive offenders to drivers who are injured in road accidents and who previously avoided detection.

There is also a fourth method (also in operation prior to random breath testing) by which drink-drive offenders are detected — blood testing of fatally injured drivers — but, for obvious reasons, no charges are proceeded with in these cases. The change in the proportion of fatally injured drivers with illegal BACs is, however, an important measure in the evaluation of the effects of random breath testing and is discussed in Chapter 5.

Another important measure in the evaluation of random breath testing is the number of people charged with drink-drive offences before and after the introduction of random breath testing. This chapter focuses on four questions related to this measure. First, has there been any change in the number of people charged with and convicted of drink-driving offences? Second, has there been any change in the distribution of BACs of those convicted? Third, to what extent can either or both of these changes be attributed to the impact of random breath testing? Lastly, has there been any change in the characteristics of offenders, and again, is this change a result of random breath testing?

Unfortunately, there are several problems in using and interpreting data on apprehended offenders. The first and main problem is that official statistics, collected by police or courts, cast light on *detected* offences only. As Ross and McCleary (1983) point out, there is a "dark figure", the size of which is unknown, constituting the difference between detected drink-driving and the actual incidence of the offence. In the area of drink-driving, however, unlike other areas of crime, it is possible to obtain a good estimate of the actual incidence of the offence by roadside surveys. When conducted in South Australia, roadside surveys indicated that the level of drink-driving was up to three times higher than that indicated by police random breath testing figures; because of the low level of random breath testing operations in South Australia and other differences in the manner of operation (for example, no pursuit of avoiding vehicles), these figures may not

represent a good estimate for the situation in New South Wales. Similar roadside surveys have, unfortunately, not been conducted in New South Wales.

The second problem concerns the interpretation of a change in the number of detected offences. If there is a drop in the number of detected offences, does this indicate a reduction in the incidence of drink-driving? Other possible explanations include the use of increasingly successful strategies by members of the public (especially drink-drive offenders) to avoid random breath testing sites, and a change in police activity to less efficient means of detecting offenders. To indicate a real drop in the level of drink-driving, such evidence would need to be backed up by other evidence of change — a reduction in the number of alcohol-related road crashes and/or behavioural changes reported in survey results. On the other hand, an increase in the number of detected offences may be the result of new methods for detecting offenders, such as compulsory blood testing of road-accident victims, and need not necessarily indicate an increase in the incidence of drink-driving.

Keeping these problems in mind, what do the data on drink-drive offences indicate? Has there been a drop in the number of proven drink-drive offences since the introduction of random breath testing? How does any indication of change fit with the earlier pattern?

*Number of drink-drive charges*

Figure 4.1 shows the number of proven drink-drive offences since 1969, the first full year after the introduction of the statutory blood alcohol limit. These figures are based on the number of court appearances for drink-drive offences determined within each calendar year (New South Wales Bureau of Crime Statistics and Research, *Court Statistics,* annual reports). The majority of these appearances (over 90%) are for driving with the prescribed concentration of alcohol (PCA). In each case, the offender's BAC is determined by breath analysis and the vast majority of these cases (about 96-97%) are proven. The other drink-drive offences include driving under the influence (where breath analysis has not been carried out), refusal to undergo breath testing, and aiding and abetting a drink-drive offence. (The actual figures plotted in Figure 4.1 are also presented in Table 4.2.) Figure 4.1 also shows the number of registered motor vehicles in New South Wales for each year from 1969 to 1983.

Figure 4.1 shows several important features of the results:

- A sharp increase in the number of proven drink-drive offences from 1969 to 1972, the first four years of operation of the "breathalyser" legislation; these years also saw increasing police effort to detect drink-drivers (New South Wales Bureau of Crime Statistics and Research, *Statistical Report: Breathalyser Offences 1972,* p.2; *1974,* p.9).
- Another sharp increase from 1980 to 1981, following the reduction of the blood alcohol limit from .08 to .05 in December 1980; there was also a 49% increase in the number of breath tests conducted by police, indicating again the role of police activity in the level of detected offences.

The only significant *decrease* in the number of proven drink-drive offences was from 1982 to 1983, following the introduction of random breath testing and the associated measures in December 1982. This reduction was very marked and is in fact the largest change (at 30.4%) between any two consecutive years in either direction (increase or decrease). The extent to which this reduction is a result of the introduction of random breath testing will be discussed later in this chapter.

*BAC distribution of offenders*

While the number of proven drink-drive offences has been increasing (until 1981), the percentage of offenders with BACs of .15 and above (now the high PCA offence) has been falling. Figure 4.2 shows the average BAC by year and the number of offenders with BACs above .15 as a percentage of the number above .08; .08 is used rather than the number with illegal BACs because the legal limit changed from .08 to .05 in December 1980. Again, the most marked change in the percentage of offenders with BACs equal to or greater than .15 occurred between 1982 and 1983 (from 45.4% in 1982 to 40.3% in 1983). This drop coincided with the introduction of random breath testing and is even more significant because it followed a series of successive reductions from 1979. The only other reduction of any significance (apart from the drop associated with the reduction in the blood alcohol limit in 1980) was in 1974 when the government launched an anti-drink-drive campaign (New South Wales Bureau of Crime Statistics and Research, *Court Statistics, 1975*).

Table 4.1 shows the proportion of offenders with BACs in the low, medium and high ranges for the three years since 1980 when the blood alcohol limit was reduced from .08 to .05.

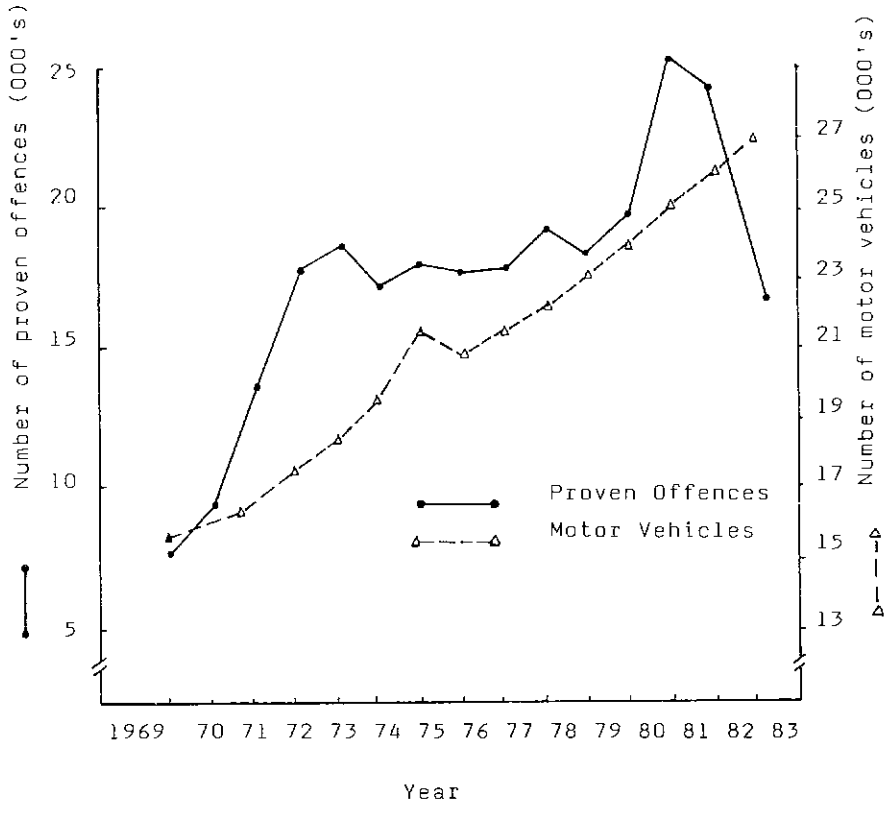



Figure 4.1. Number of proven drink-drive offences and number of registered motor vehicles

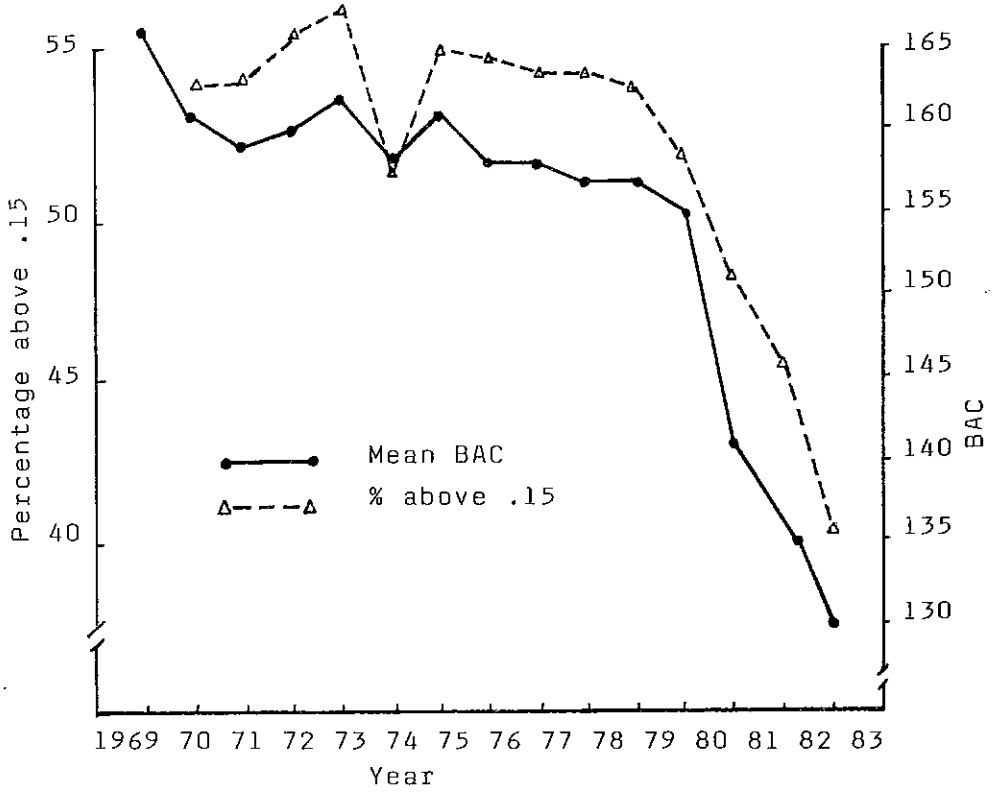



Figure 4.2. Mean blood alcohol concentration (BAC) and percentage of offenders with BACS above .15 by year

**Table 4.1 Percentage of offenders with BACs in three ranges by year**

| | Low .05 - .079 | Medium .08 - .149 | High .15 + |
|---|---|---|---|
| 1981 | 12.3 | 45.6 | 42.1 |
| 1982 | 14.8 | 46.6 | 38.6 |
| 1983 | 18.6 | 48.6 | 32.8 |

Together Figure 4.2 and Table 4.1 indicate a significant drop in the percentage of drink-drive offenders with high BACs. Once again, this reduction was most marked from 1982 to 1983, indicating not only a drop in the number of drink-drive offences, but also a continuation of the trend away from the more serious, high BAC offence among detected offenders following the introduction of random breath testing. To what extent can these changes be attributed to random breath testing?

*Effect of random breath testing on the number of drink-drive offenders*

Before December 1982, all drink-drive offenders were detected by (non-random) mobile police patrols so it is to be expected that the number of guilty findings is generally of the same order as the number of positive breath analyses each year (Table 4.2). Most drink-drive appearances involve PCA offences (ranging from 88% to 93.2% of total appearances depending on year) and the evidentiary status of breath analysis readings means that the vast majority of PCA offenders (98-99%) are found guilty.

With the introduction of random breath testing and compulsory blood testing, the number of non-random breath tests fell by 26.8% from 113,985 in 1982 to 83,720 in 1983. At the same time, the number of proven drink-drive offences fell from 24,269 to 16,894, a fall of 30.4%. At first glance, then, it appears that the reduction in the number of proven offences might be explained by the drop in the number of non-random breath tests, a result of a shift in resources from non-random to random testing. This hypothesis seems to be further supported by the fact that the reduced number of non-random breath tests was almost entirely accounted for by the fall (from 43,242 in 1982 to 15,362 in 1983) in the number of non-random breath tests conducted by Highway Patrol officers, whose efforts were largely redirected to random breath testing.

The picture is, however, more complicated than it first appears and the extent to which the drop in the number of non-random breath tests may account for the fall in the number of drink-drive offenders depends on at least two factors: first, whether there is a sufficient drop in the number of non-random tests, and second, whether there is a difference in charge rates between random and non-random breath testing. It should be noted that the fall from 24.4% (1982) to 18.7% (1983) in the percentage of non-random breath tests that proved positive would also have contributed to the drop in the number of breath analyses and therefore the number of charges.

It is obvious from Table 4.3 that the 890,288 random breath tests conducted in 1983 (and the 1,292,942 tests in 1984) more than compensate in number alone for the reduction of 30,265 in the number of non-random tests from 1982 to 1983[1]. The number of charges resulting from random breath tests is, however, substantially lower than the number yielded by non-random testing. In 1983, non-random breath testing yielded 13,260 charges whereas there were only 5,348 charges from a much greater number of random breath tests; the figures in 1984 were similar — 12,198 "non-random" charges compared with 6,402 "random" charges.

This does not mean, however, that the drop in the number of proven drink-drive offenders from 1982 to 1983 can be explained as the result of a change in police practices from a "high catch" method (non-random) to a "low catch" method (random breath testing). Even if it is assumed that the same number of non-random tests was conducted in 1983 as in 1982, with a charge rate of 15.8% (13,260 charges/83,720 tests), the "extra" 30,265 tests would have yielded an additional

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1. Table 4.3 also points out an interesting and substantial difference in metropolitan and country charge rates for non-random testing. In all three years (1982-1984), the country charge rate was significantly higher than the metropolitan charge rate; and although there was a clear downward trend in the metropolitan charge rate, the 1983-1984 country comparison does not support an interrupted downward trend.

**Table 4.2 Number of non-random breath tests, breath analyses*, and number of court appearances and proven offences for total drink-drive charges and PCA charges by year**

| | Breath tests* | | Breath analyses* | | Appearances | | Proven offences | |
|---|---|---|---|---|---|---|---|---|
| | No. | % positive | No. | % positive | Total | PCA | Total | PCA |
| 1973 | 27,601 | 89.3 | 23,654 | 79.2 | 19,278 | 16,844 | 18,961 | 16,768 |
| 1974 | 25,861 | 82.4 | 21,882 | 78.2 | 17,745 | 15,570 | 17,241 | 15,606 |
| 1975 | 25,723 | 79.9 | 20,883 | 79.9 | 18,180 | 16,014 | 17,816 | 15,836 |
| 1976 | 25,823 | 79.6 | 21,194 | 80.0 | 17,907 | 15,945 | 17,578 | 15,702 |
| 1977 | 27,183 | 79.3 | 22,300 | 79.9 | 18,338 | 16,561 | 17,775 | 16,300 |
| 1978 | 29,059 | 82.6 | 24,837 | 79.9 | 19,716 | 18,012 | 19,138 | 17,761 |
| 1979 | 28,032 | 82.4 | 23,878 | 79.5 | 19,060 | 17,314 | 18,270 | 17,008 |
| 1980 | 79,031 | 33.0 | 27,032 | 77.3 | 20,468 | 18,906 | 19,790 | 18,629 |
| 1981 | 118,012 | 26.2 | 31,948 | 86.2 | 25,995 | 24,229 | 25,261 | 23,981 |
| 1982 | 113,985 | 24.4 | 28,715 | 85.6 | 25,015 | 23,169 | 24,269 | 22,921 |
| 1983 | 83,720 | 18.7 | 16,185 | 81.9 | 17,409 | 16,205 | 16,894 | 15,977 |
| 1984 | 92,125 | 15.0 | 14,248 | 85.6 | N.A. | | N.A. | |

* Figures supplied by Breath Analysis Squad, New South Wales Police Department.

**Table 4.3 Number of non-random and random breath tests, breath analyses and charges by area and by year from 1982 to 1984**

| | Non-RBT | | | RBT | | |
|---|---|---|---|---|---|---|
| | Metropolitan | Country* | Total | Metropolitan | Country* | Total |
| *1982* | | | | | | |
| No. of breath tests | 76,574 | 37,411 | 113,985 | 14,735** | 18,249** | 32,984 |
| No. of breath analyses | 15,323 | 13,392 | 28,715 | 90 | 135 | 225 |
| No. of charges | 12,704 | 11,869 | 24,573 | 42 | 84 | 126 |
| Charge rate | 16.6% | 31.7% | 21.6% | 0.29% | 0.46% | 0.38% |
| *1983* | | | | | | |
| No. of breath tests | 57,145 | 26,575 | 83,720 | 471,390 | 418,898 | 890,288 |
| No. of breath analyses | 8,350 | 7,835 | 16,185 | 3,493 | 3,760 | 7,253 |
| No. of charges | 6,728 | 6,532 | 13,260 | 2,439 | 2,909 | 5,348 |
| Charge rate | 11.8% | 24.6% | 15.8% | 0.52% | 0.69% | 0.60% |
| *1984* | | | | | | |
| No. of breath tests | 71,136 | 20,989 | 92,125 | 648,647 | 644,295 | 1,292,942 |
| No. of breath analyses | 7,380 | 6,868 | 14,248 | 3,212 | 3,190 | 6,402 |
| No. of charges | 6,262 | 5,936 | 12,198 | 2,503 | 2,593 | 5,096 |
| Charge rate | 8.8% | 28.3% | 13.2% | 0.39% | 0.40% | 0.39% |

* Country includes Newcastle and Wollongong — separate figures were not available for non-random testing.
** There were only two weeks of random breath testing in 1982 (17-31 December).

4,794 charges. This hypothetical short-fall is, however, more than made up for by the 5,348 charges generated by random breath testing, despite its lower charge rate.

This is a conservative test of the effect of the drop in the number of non-random tests on the number of charges because it is highly likely that the number of non-random breath tests is underestimated. The degree of error is perhaps as much as 40-50% because, according to a police source, police do not always fill out the required P389 Breath Test Card (see Appendix IX) for negative tests. If this is the case, the charge rate for non-random tests may be substantially lower so that a drop in the number of tests would have had a less dramatic effect on the number of non-random charges. There is no real reason to believe that police were more or less vigilant in completing these records in 1983 than in 1982.

There is, however, an unexplained inconsistency in the figures — the number of PCA charges generated in 1983 by non-random and random breath testing was 18,608 whereas the number of drink-drive appearances in Courts of Petty Sessions (now called Local Courts) for PCA offences was only 16,205. This figure (16,205) does not take account either of charges following compulsory blood testing or other drink-drive offences (for example, refusing a breath test, driving under the influence, and wilfully altering one's BAC) which could be expected to make the discrepancy even greater. Neither can delay in the court process account for the difference in the figures. Although all people who offended and were apprehended in 1983 would not have had their cases determined within 1983 (and thereby appear in the 1983 figures), the number of cases carried over into 1983 from 1982 would be expected to be similar to the number carried from 1983 to 1984.

But even using the larger of the two figures (18,608), the reduction in the number of appearances for drink-drive offences cannot be fully explained by a shift in police enforcement procedures from non-random to random testing. The drop in the number of appearances is greater than the number of charges which "extra" non-random testing would have yielded and, anyway, these "extra" charges were replaced by charges generated by random breath testing. The fall in the number of drink-drive charges is therefore not merely an artefact of a change in police activity from "high-catch" to a "low-catch" method of enforcement, but appears to indicate some real change in the level of offending.

*Effect of compulsory blood testing on the number of offenders*

So far our attention has been confined to non-random and random breath testing on the grounds that the commitment of resources to random breath testing was likely to and apparently did affect to some extent the level of non-random breath testing and the number of consequent charges. But at the same time, another means of detecting drink-drive offenders was introduced. With the introduction of compulsory blood testing of accident victims, injured drink-drivers who had previously avoided detection because of their injuries became subject to prosecution. Yet despite this additional source of charges, the number of drink-drive offenders *fell* after the introduction of the new legislation. The most plausible explanation for the fall in the number of drink-drive offenders despite the operation of two new methods for detecting offenders is that people were deterred from drink-driving — that is, there was a real drop in the incidence of drink-driving.

But how many offenders were detected by compulsory blood testing and what contribution did this new method of detection make to the total numbers of

detected offenders? Unfortunately, again the answer to this question is complicated by problems with the available data. In addition to data discrepancies associated with breath analyses, there are also discrepancies in the data related to compulsory blood sampling: between the number of positive (illegal) blood samples and the number of court actions proceeding from illegal blood sample results. The picture is further complicated by the inevitable delay in cases arising from compulsory blood testing coming before the court. This delay is a result of the time involved in the analysis of the first, and of the second confirmatory samples,[2] in the notification of the police involved in the case, and the preparation of the breach report and ultimate summons.[3]

Table 4.4 shows the results of blood sample analyses by the Division of Analytical Laboratories (provided by the Department of Health) together with the number of resultant court actions on figures supplied by the Police Department. As Table 4.4 shows, there is clearly a substantial discrepancy between the number of illegal BAC results and the actual and predicted number of court actions. Some "slippage" in numbers is expected because blood sample results may include a number of pedestrians, pedal cyclists or even some passengers, none of whom is liable to prosecution. However, since pedestrians and pedal cyclists comprised only about 17% of road-accident victims in 1983 and 1984 (Traffic Accident Research Unit's *Bulletin on Traffic Crash Data*, January 1985) and few passengers are likely to have been tested, about 75% of positive blood samples, on a conservative estimate, should have resulted in court appearances for drink-drive offences. In Victoria, for example, 81.5% of all compulsory blood samples over three years (1978-1980) were obtained from drivers (McDermott & Hughes, 1982); the figure was identical, at 81.5% in 1983 (Road Traffic Authority, personal communication).

On the basis of the number of illegal results then, the expected number of court appearances would have been 2,555 in 1983 and 2,452 in 1984. On the figures provided by the Police Department, however, there were only 1,361 court actions in 1983 and 1,767 in 1984. Even allowing for the effect of delayed proceedings, there is clearly a substantial discrepancy between the two sets of figures. Other possible explanations may include the inability to trace the person who is the subject of the summons, and court action not being proceeded with for various reasons (e.g., more than two hours between the accident and the sample being taken, the accident occurring on private property). However, even a combination of these factors is unlikely to account for the size of the discrepancy — over 1,800 cases over

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2. The blood sample is divided into three portions — one is sent to the Division of Analytical Laboratories (DAL) for analysis, the second is kept at the hospital, and the third is available to the accident victim. If the first sample proves positive (.05 +) upon analysis, the investigating police involved at the time of the accident are notified and the second sample is delivered to DAL for confirmatory analysis. The results of the analyses are sent to the Police Blood Sampling Unit and the investigating police are notified of the result. If the result is positive, a breach report is prepared, sent to the Adjudications Section of the Police Department and a summons is issued if found to be warranted.
3. Drivers who are injured in an accident and found to have an illegal BAC through compulsory blood testing are dealt with by summons for two obvious reasons: (1) they cannot be arrested and charged at the time of the accident because they are injured; (2) the results of analysis of the blood sample are required as evidence before any proceedings are instituted.

two years, on a conservative estimate. Problems in the implementation of compulsory blood testing are apparently not confined to New South Wales. McDermott and Strang (1978) reported similar problems in Victoria from 1974 to 1977, with only "29% of briefs received by the Breath Analysis Section of the Victoria Police" in 1975 being authorised for prosecution. The reasons for the discrepancy in the New South Wales figures are not clear.

Despite the difficulties, what do the results in Table 4.4 indicate about the BAC levels of road accident victims, bearing in mind that all samples from those injured may not have come from drivers? In 1983, 15.8% of blood samples yielded BACs over the legal limit;[4] had they been obtained from drivers, they would have rendered their "owners" liable to prosecution for a drink-drive offence. In 1984, this percentage fell to 13.3%. It is significant that the biggest fall was in the proportion of those with high BACs.

The average BAC readings for fatally injured drivers also fell from 1983 to 1984 (Chapter 5). These results, together with the overall reduction in the number of drink-drive charges suggest a real decrease in the incidence of drink-driving and point to the probable deterrent effect of random breath testing.

The next question of interest is how the addition of offenders apprehended by the two new means of detection has affected the overall BAC distribution of offenders.

**Table 4.4 Number of blood samples, and court actions, and number and percentage by blood alcohol concentration and year**

| | 1982* | | 1983 | | 1984 | |
|---|---|---|---|---|---|---|
| | No. | %** | No. | % | No. | % |
| Total blood samples | 500 | | 21,720 | | 25,283 | |
| Unsatisfactory samples | 1 | | 104 | | 634 | |
| Total satisfactory samples | 499 | | 21,616 | | 24,649 | |
| *BAC RESULTS* | | | | | | |
| Nil | 385 | 77.2 | 16,547 | 76.5 | 20,311 | 82.4 |
| 0.001-0.049 | 26 | 5.2 | 1,663 | 7.7 | 1,068 | 4.3 |
| Low (0.05-0.079) | 6 | 1.2 | 383 | 1.8 | 418 | 1.7 |
| Medium (0.08-0.149) | 27 | 5.4 | 1,162 | 5.4 | 1,109 | 4.5 |
| High (.15+) | 55 | 11.0 | 1,861 | 8.6 | 1,742 | 7.1 |
| Total illegal | 88 | 17.6 | 3,406 | 15.8 | 3,269 | 13.3 |
| No. of court actions | | | 1,361 | | 1,767 | |
| No. of expected court actions*** | | | 2,555 | | 2,452 | |

* Two weeks of blood sampling only, from 17 to 31 December.
** Percentage of total satisfactory samples.
*** 75% of the number of illegal samples.

4. In Victoria in 1983, 15.9% of drivers injured in accidents had BACs greater than or equal to .05 (Road Traffic Authority), very close to the New South Wales figure. This proportion had fallen from 21.3% for 1974-1977 (McDermott & Strang, 1978) and 20.5% for 1978-1980 (McDermott & Hughes, 1982).

*Effect of random breath testing and compulsory blood testing on BAC distribution of offenders*

As indicated earlier (Table 4.1 and Figure 4.2), there was a marked reduction in the proportion of offenders with high BACs (above .15) from 1982 to 1983. This drop followed a fall in the preceding few years, indicating that this was a continuation of a trend rather than a change in direction. To this extent, the likelihood of an effect from the introduction of random breath testing is lessened, although it may have contributed to or strengthened the downward trend in 1983.

The influence that the two new means of apprehension of drink-drive offenders may have had on the distribution of BACs for offenders depends on two factors:

*(a)* The relative numbers of offenders detected by the three methods; and

*(b)* The difference in BAC distributions among the three methods.

As indicated earlier, non-random testing generated over twice as many charges as random breath testing in both 1983 and 1984. The relative contribution of each of the three methods of detection to the total number of charges each year is shown in Table 4.5, although, as already outlined, there is some uncertainty about the figures for blood sampling. For the sake of this analysis, the number of court actions arising from compulsory blood testing is used rather than the expected number of prosecutions, and the distribution of BACs is assumed to be the same as that for all positive road accident blood samples.

**Table 4.5 Number and percentage of positive results/charges by method of apprehension and year of offence**

| | Non-random breath testing | | Random breath testing | | Blood sampling | | |
|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | TOTAL |
| 1982 | 24,573 | 99.5 | 126 | 0.5 | 0 | 0.0 | 24,699 |
| 1983 | 13,260 | 66.4 | 5,348 | 26.8 | 1,361 | 16.8 | 19,969 |
| 1984 | 12,198 | 64.0 | 5,096 | 26.7 | 1,767 | 9.3 | 19,061 |

As expected, in 1982 when there were only two weeks of random breath testing and compulsory blood sampling, nearly all the offenders (99.5%) were apprehended by non-random patrols. In 1983 and 1984, nearly two-thirds of offenders were still apprehended in this way, with random breath testing contributing most of the rest.

Differences between the methods in the numbers apprehended would have little effect on the overall BAC distribution unless there were differences in the BAC distributions across methods. As Table 4.6 indicates, the difference between methods of apprehension was substantial although there was little difference *within* methods (across the years). Blood sampling yielded the greatest proportion of BACs in the high range (about 54%) and random breath testing yielded the lowest (about 19%). Offenders apprehended by random breath testing had lower BACs than those detected by non-random testing or by blood sampling, with more BACs in the low and medium range than for the other forms of detection. These results are similar to Goldberg's (1980) findings in Sweden of mean BACs of 0.099 for randomly tested drivers, 0.130 for "traffic violating drivers" (c.f. non-random), and 0.160 for accident-involved drivers; 56.9% of accident-involved drivers in Sweden had BACs of .15 and above compared with 54% of positive blood samples for road-accident victims in New South Wales.

**Table 4.6 Percentage of low, medium and high PCA charges/court actions by method of detection and by year**

| | | Low PCA % | Medium PCA % | High PCA % | Total no. of charges/appearances |
|---|---|---|---|---|---|
| *Non-random breath testing* | 1982 | 15.3 | 47.5 | 37.2 | 24,573 |
| | 1983 | 16.2 | 47.0 | 35.8 | 13,260 |
| | 1984 | 15.3 | 47.2 | 37.5 | 12,198 |
| *Random breath testing* | 1982 (2 wks only) | 34.1 | 47.6 | 18.3 | 126 |
| | 1983 | 28.9 | 51.5 | 19.6 | 5,348 |
| | 1984 | 26.7 | 54.1 | 19.1 | 5,096 |
| *Blood sampling* | 1982 (2 wks only) | 6.8 | 30.7 | 62.5 | N.A. |
| | 1983 | 11.2 | 34.1 | 54.6 | 1,361 |
| | 1984 | 12.8 | 33.9 | 53.3 | 1,767 |
| *Court statistics** | 1982 | 14.8 | 46.6 | 38.6 | 22,765** |
| | 1983 | 18.6 | 48.6 | 32.8 | 16,205** |
| | 1984 | N.A. | N.A. | N.A. | N.A. |

* The court statistics include only cases determined within the year mentioned.
** Appearances for PCA offences.

In summary, then, the introduction of random breath testing and the apprehension of drink-drive offenders with generally lower BACs probably contributed to the reduction in the proportion of offenders with high BACs from 1982 to 1983. On the other hand, this factor was partly balanced by a smaller number of offenders detected by blood sampling, the majority (54%) of whom had high BACs. As indicated earlier, the fall in the proportion of offenders with high BACs was also a continuation of the trend in the previous three years.

*Characteristics of drink-drive offenders*

The fact that those apprehended by random breath testing generally had lower BACs than those detected by other means raises the question of the representativeness of "randomly" detected offenders. There are two aspects to this issue. First, are randomly detected offenders representative of detected drink-drivers? Second, are they more representative of the population of drinking drivers than other drink-drive offenders? In terms of BAC distribution, the answer to the first question is clearly, no. But what of other characteristics?

Unfortunately, statistics collected in New South Wales on court appearances do not identify offenders by the means of apprehension and, in the absence of a special study, no court data are available to answer this question. We can, however make some progress towards an answer using some police data on positive breath analyses in the Sydney metropolitan area. A South Australian study (Bungey & Sutton, 1983) also provides some useful comparative data evidence and points to significant differences between offenders detected by random breath testing and those detected by non-random patrols. The significant differences are two-fold — in terms of sex, and age.

One of the most consistent findings in the area of drink-drive research has been the predominance of males among drink-drive offenders. In 1983, 93.6% of proven drink-drive offences in New South Wales were committed by men, although they comprised only 60.5% of licensed drivers. The figures for previous years are similar, as Table 4.7 shows, although there is some indication of a small drop in the percentage of males from 1982 to 1983.

The pattern is very similar elsewhere in Australia and overseas. In South Australia, men comprised over 93% of drink-drive offenders in 1981 (Bungey &

**Table 4.7 Number and percentage of drink-drive (proven) offenders* by sex and year**

| | Males | | Females | | |
|---|---|---|---|---|---|
| | No. | % | No. | % | TOTAL** |
| 1977 | 17,315 | 97.6 | 430 | 2.4 | 17,745 |
| 1978 | 18,624 | 97.3 | 514 | 2.7 | 19,138 |
| 1979 | 17,724 | 97.0 | 546 | 3.0 | 18,270 |
| 1980 | 19,009 | 96.1 | 780 | 3.9 | 19,789 |
| 1981 | 24,204 | 95.8 | 1,057 | 4.2 | 25,261 |
| 1982 | 23,015 | 94.8 | 1,253 | 5.2 | 24,268 |
| 1983 | 15,808 | 93.6 | 1,084 | 6.4 | 16,892 |

* These figures should be regarded as approximations as they refer to appearances rather than distinct persons; some offenders may appear more than once a year.
** Total for whom sex of offender was known.

Sutton, 1983). In Canada and Finland, the predominance of men was even stronger, at 98% in Canada (Vingilis, Adlaf & Chung, 1982) and 97.5% in Finland (Penttila et al., 1978). These figures all refer to convicted drink-drive offenders.

The results of roadside surveys give some indication of the relative incidence of drink-driving among men and women in the community, not just detected drink-drive offenders, and the findings across surveys in South Australia (McLean et al., 1980, 1984), Finland (Penttila et al., 1978) and in Canada (Vingilis et al., 1982) have been quite consistent. Although all studies reported many more men than women with illegal BACs, drink-driving was more common among women than indicated by their numbers in official statistics for detected drink-drive offenders. It is reasonable to assume that the situation in New South Wales is little different.

The results of roadside surveys in Adelaide (McLean et al., 1984) also revealed surprisingly little difference across age-groups for men in the proportions with illegal BACs (see Appendix X). This is surprising, because the statistics for convicted offenders in New South Wales (New South Wales Bureau of Crime Statistics and Research, *Court Statistics, 1982* and earlier annual reports) show that young men in particular are heavily over-represented among convicted offenders. In 1982, for example, men under 25 accounted for 39.8% of all drink-drive convictions but comprised only 11.3% of licensed drivers. The 1983 figures were similar — 37.8% of offences, but only 10.7% of licence holders (see Table 4.8). South Australian court statistics reveal an almost identical pattern (Bungey & Sutton, 1983, p.10).

**Table 4.8 Percentage of drink-drive convictions and licence-holders by age and sex for 1982 and 1983**

| | MEN | | WOMEN | |
|---|---|---|---|---|
| | % convictions | % licence-holders | % convictions | % licence-holders |
| *Under 25 years* | | | | |
| 1982 | 39.8 | 11.3 | 1.9 | 7.5 |
| 1983 | 37.8 | 10.7 | 2.2 | 7.2 |
| *25 years and over* | | | | |
| 1982 | 55.0 | 49.6 | 3.2 | 31.6 |
| 1983 | 55.8 | 49.8 | 4.2 | 32.3 |

One explanation for the over-representation of young men among convicted offenders may lie in the fact that young men tend to drive more often than other groups, especially at night and especially on Friday and Saturday nights when police enforcement of the drink-drive legislation, both random and non-random, is most intense (McLean et al., 1980; Homel, 1983 b,d). They might therefore be expected to come to police attention and be breath tested simply because of their greater presence on the roads. Another possible explanation, supported by Homel (1983d) and Kirkham and Landauer (in press), is that young men are subject to police bias in selection and charge procedures and to heavier penalties by courts once convicted (Homel, 1983d). Homel (1983d) suggested that "the young (unskilled) male is singled out for special attention because he is seen to pose, more than other groups of drinking drivers, a greater threat to public safety . . ." (p.510).

If the over-representation of young men in offender statistics is due to bias in police selection, we might expect some difference in the profile of randomly-

detected offenders, if random breath testing is more "random" in its selection of drivers for testing. Although we have no relevant *court* data, data provided by the Breath Analysis Squad of the Police Department does allow a comparison of the age and sex breakdown between "randomly" and "non-randomly" detected offenders in the Sydney metropolitan area (Table 4.9). These data indicate that for the metropolitan area at least, offenders detected by random breath testing were more likely than those detected by non-random police patrols to be women, and, among men, to be 25 or older. In 1984, for example, 39.2% of "non-random" male offenders were under 25 compared with only 21.6% of those apprehended by random breath testing. The sex difference was less marked but, in both 1983 and 1984, "randomly" detected offenders included a higher proportion of women than "non-random" offenders. This is in line with the small increases in the overall proportion of female offenders from 1982 to 1983; the relatively small number of "randomly" detected offenders (less than 30% in both 1983 and 1984) means that this group is unlikely to have a large effect on the overall composition of drink-drive offenders.

A South Australian study provides similar evidence of differences between offenders detected by random breath testing and those apprehended by other means. Bungey and Sutton (1983) found that randomly detected offenders included more women (9.4% compared with 6.9%), and tended to be older than those apprehended by normal police patrols, operating before and after the introduction of random breath testing (see Appendix XI). They also had lower average BACs (.133 compared with .153). Bungey and Sutton (1983) concluded that "random breath testing ... seems less 'unrepresentative' in its selection of offenders than ordinary police patrols" (p.41). It seems that random breath testing may bring into its net a group of offenders who have previously been less subject to police attention. This is, in fact, one of the aims of random breath testing — to disabuse drivers of the notion that if they drive carefully and are not involved in an accident that they will not be subjected to breath testing.

*Summary*

Following the introduction of random breath testing, there was a sharp fall in the number of proven drink-drive offences. The reduction from 1982 to 1983 (of about 30%) represents the only significant decrease in the figures since 1969. Preliminary figures for 1984 indicate that the decrease was not confined to 1983 alone, but continued into 1984. Although there was at the same time a fall in the number of non-random breath tests conducted by normal police patrols, this shift in police activity was not sufficient to account for the drop in the number of detected offenders: it was not simply the result of a shift away from "high-catch" patrols to "low-catch" random breath testing. Despite the addition of a second new means of detecting drink-drive offenders (via compulsory blood testing of road accident victims), the number of detected offenders fell, suggesting that there may have been a real drop in the incidence of drink-driving. Roadside surveys could have established more definitive evidence of this change had they been conducted.

There was also a drop in the average BAC of convicted drink-drivers, a change which may be the result of adding a new group of offenders with generally lower BACs — those apprehended by random breath testing. It may also mean that drivers were limiting their drinking, although those who were included in the court statistics among the proven offenders obviously still had illegal BACs.

There were differences in BAC distribution among offenders apprehended by the different methods; those "randomly" detected had the lowest proportion of

**Table 4.9 Number of positive breath analyses in the metropolitan area of Sydney by age and sex, means of apprehension and year**

| | Random | | | | | | Non-Random* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1982 | | 1983 | | 1984 | | 1982 | | 1983 | | 1984 | |
| | No. | %** | No. | % | No. | % | No. | % | No. | % | No. | % |
| MEN | | | | | | | | | | | | |
| Under 25 years | 9 | 37.5 | 395 | 24.0 | 316 | 21.6 | 3,862 | 36.5 | 2,154 | 39.9 | 2,062 | 39.2 |
| 25 years + | 14 | 58.3 | 1,120 | 67.9 | 999 | 68.4 | 6,094 | 57.6 | 2,899 | 53.8 | 2,837 | 53.9 |
| Total | 23 | 95.2 | 1,515 | 91.9 | 1,315 | 90.1 | 9,956 | 94.1 | 5,053 | 93.7 | 4,899 | 93.1 |
| WOMEN | | | | | | | | | | | | |
| Under 25 years | 0 | 0.0 | 44 | 2.7 | 38 | 2.6 | 213 | 2.0 | 119 | 2.2 | 137 | 2.6 |
| 25 years + | 1 | 4.2 | 90 | 5.4 | 107 | 7.3 | 417 | 3.9 | 221 | 4.1 | 224 | 4.3 |
| Total | 1 | 4.2 | 134 | 8.1 | 145 | 9.9 | 630 | 5.9 | 340 | 6.3 | 361 | 6.9 |
| TOTAL | 24 | | 1,649 | | 1,460 | | 10,586 | | 5,393 | | 5,260 | |

* These data do not match the figures for non-random charges in Table 4.3 because of problems of reliability with the data in Table 4.3.
** Percentage of total breath analyses for year.

high BACs (.15 and over) whereas injured drink-drivers detected by compulsory blood sampling had the highest. If, as seems likely, on the basis of the metropolitan breath analyses data, the overall drink-drive statistics follow the same pattern as the South Australian statistics, then those detected by random breath testing would appear to be more representative of the general driving population than those detected by "normal" non-random patrols. In South Australia and also in the Sydney metropolitan area, they tended to be older and were more likely to be women, a small shift away from the heavy over-representation of young men among convicted drink-drivers.

The availability of comparative data for random versus non-random testing only for the metropolitan area was not the only difficulty encountered with data in this area. There were also unexplained inconsistencies between the number of charges (from both positive breath analyses and positive blood sample results) and the number of court appearances for drink-drive offences. The discrepancy was especially marked for cases proceeding from the compulsory blood testing of road-accident victims. Accurate and easy access to these Police data is precluded by the fact that the data from the Blood Sampling Unit are not computerised. There were also difficulties with Police data on non-random breath testing, both with its reliability and its usefulness. The limited form in which these data is available does not allow for necessary but more complex cross-tabulations. For example, it is not yet possible, although the information is available on the P389 forms, to compare the charge rates for accident-involved (non-injured) drivers with the charge rates from non-random patrols. Neither is it possible without computer analysis to break this down further by the age and sex of the driver and by the reason for breath testing (accident, manner of driving, traffic offences, random breath testing). Computerisation of these data is a necessary step to allow efficient monitoring of the system.

## CHAPTER 5

# Crash Statistics

*The role of alcohol in crash causation*

The contributory role of alcohol in crash causation has been recognised for some time — in fact, the first legislation in New South Wales with the aim of controlling drink-driving was introduced in the Motor Traffic Act of 1909. The most commonly cited set of studies to support the case of increased crash risk with the increasing blood alcohol concentration of drivers is the set referred to as the Grand Rapids, Toronto, Evanston and Manhattan studies. As Ross (1982) states:

> . . . concentrations of alcohol greater than 0.05 per cent in the blood are associated with important increases in crash probabilities. Relative crash probabilities increase exponentially (p.2).

More recent studies have confirmed these findings, including the only such study conducted in Australia. McLean et al. (1980) found similar results in their Adelaide-based study, as Figure 5.1 (reproduced from their report) shows.

Other evidence implicating alcohol as an agent in crashes is the increased likelihood of alcohol involvement as the severity of the crash increases. The following figures cited in the Staysafe first report and provided by the Traffic Accident Research Unit in their 1982 submission to Staysafe provide a convincing picture of the role of alcohol in crashes:

- 6.2% of drivers in non-injury crashes
- 9.4% of drivers in non-fatal injury crashes
- 13.6% of drivers surviving crashes in which other people were killed
- 45.0% of drivers killed in crashes

were found to have illegal BACs (greater than or equal to .05). (Drivers also includes motor cyclists.)

Another important strand of evidence in the case against alcohol is provided by the body of behavioural research showing the effect of alcohol on driving-related behaviours. Alcohol consumption is, for example, associated with impaired performance of psycho-motor skills such as reaction time, multiple choice decision-making and width of peripheral vision (Hendtlass, 1984). The effects are complex, measured by a variety of methods (for example, laboratory studies of reaction time and attentional processes, simulator experiments and closed-course and on-road driving tests: Attwood, Williams & Madill, 1980: Franks et al, 1976; Glencross, 1981) and affected by a number of factors. The extent of impairment depends on a variety of factors, including experience with the task at hand, experience with drinking, and blood alcohol concentration; the last factor is in turn affected by the rate of drinking and physical characteristics such as body weight, body water as a proportion of body weight, and the rate of alcohol metabolism (Glencross, 1980). In summary, the research points conclusively to significant decrements in skills necessary for competent driving performance associated with alcohol consumption.

Although most of the behavioural research has been conducted for obvious reasons under controlled conditions, these results together with the "real-world" findings about alcohol-involvement in crashes present a convincing case for the contributory role of alcohol in crashes. Ross (1982) summarises the conclusions about alcohol involvement in crashes in the following four points:

1. Alcohol is often found in the blood of drivers involved in crashes of all kinds and proportionately more in the more serious crashes as defined by fatalities and serious injuries.
2. Alcohol is disproportionately present in the blood of drivers in single-vehicle crashes and of drivers judged responsible for multiple-vehicle crashes.
3. Drivers with alcohol in their blood are more likely to be found at night and on weekends, at times and places where crash involvement is high, and among people like young men who are disproportionately involved in crashes.
4. The more elevated the blood-alcohol concentration, the greater the risk of a crash. It should be noted that the risk is considerably increased at concentrations that do not necessarily produce clinical signs of intoxication.

Because of the recognised role of alcohol in crashes, crash statistics provide the most important measure of the effect and effectiveness of random breath testing. The main aim of random breath testing is to deter potential drink-drivers by reducing the incidence of drink-driving and thereby reduce the number of fatalities and injuries resulting from alcohol-involved crashes. The extent to which this objective is achieved is therefore a measure of the effectiveness of random breath testing. In particular, the following changes would be expected if random breath testing has been effective:

- A reduction in the total number of fatal and injury crashes;
- A greater reduction in night-time and single vehicle crashes;
- A reduction in the proportion of those killed or injured in crashes who have illegal BACs.

These measures formed the basic of Ross's (1982) analysis of the effectiveness of drink-driving legislative changes and counter-measures.

As a measure of the effectiveness of random breath testing, crash statistics have a number of advantages. For a number of reasons, crashes involving injury, and especially fatality, are likely to be reported and recorded in a standardised form state- or nation-wide. Crash statistics are therefore generally more reliable than other measures and they avoid some of the problems inherent in offender statistics (Ross, 1982: Sykes, 1984).

So what do the data on road accident fatalities and casualties indicate? Has there been a reduction in the numbers killed and injured since the introduction of random breath testing? And to what extent can any drop be attributed to random breath testing?

This chapter does not attempt to provide detailed and complete answers to these questions, but presents a preliminary outline. Further detailed analysis will be presented by the Traffic Accident Research Unit in its report.

*Change in the number of fatalities*

Statistics prepared by the Traffic Accident Research Unit indicate a marked reduction in the number of fatalities resulting from road crashes in 1983 and 1984 compared with the "pre-RBT average". The "pre-RBT" average is an average over six years, "calculated from the statistics for 1977-1982 with seasonal adjustments for motor cyclists and pedestrians" (TARU monthly bulletins of preliminary traffic crash data). The six-year average is used to provide a "pre-RBT" baseline to take account of the random fluctuations from year to year.

Table 5.1 shows the number of fatalities by type of road user for 1983 and 1984 compared with the "pre-RBT average".

As Table 5.1 shows, 966 people were killed in road accidents in New South Wales during 1983 — a reduction of 25.7% on the predicted pre-RBT average. In 1984, 1,034 people were killed, 20.5% less than the predicted figure. The biggest reductions for both years were for drivers and passengers, a result which is consistent with the expected deterrent effect of random breath testing on drink-driving; a greater fall would, however, also have been expected for motor cyclists. Also consistent with the random breath testing effect, and with the predicted "wearing off" of this effect is the fact that the reduction in fatalities was greater for the early than for the later months, as Table 5.2 shows. For example, the decrease to the end of February 1983 was 37.9% compared with 26.8% to the end of June, and 25.7% to the end of the year. The "wearing off" effect was, however, more gradual and not as marked as predicted in some quarters (Homel, 1983). Despite a rise in the relative number of fatalities in mid-1984, by the end of 1984, the number of fatalities was still 20.0% below the pre-RBT figure — two years after its introduction.

*Change in the number of casualties*

The pattern for the number of casualties in the two years since the introduction of random breath testing is similar to the pattern for fatalities, but the reductions are less marked. In 1983, 34,942 people were injured in road accidents, 4,487 fewer than predicted by the "pre-RBT average", representing an 11.4% reduction. The number injured in 1984 was 36,437, down by 7.7% on the pre-RBT average, but

**Table 5.1* Number of fatalities in New South Wales by year and road user type**

| | | 1983 | | 1984 | |
|---|---|---|---|---|---|
| | Pre-RBT average* | No. | % change | No. | % change |
| Drivers | 498.6 | 339 | −32.0 | 373 | −25.2 |
| Passengers | 352.6 | 232 | −34.2 | 274 | −22.3 |
| Pedestrians | 259.2 | 212 | −18.2 | 211 | −18.6 |
| Motor cyclists | 164.4 | 153 | −6.9 | 152 | −7.5 |
| Pedal cyclists and others | 26.2 | 30 | +14.5 | 24 | −8.4 |
| TOTAL | 1,301.0 | 966 | −25.7 | 1,034 | −20.5 |

*Source:* Traffic Accident Research Unit's bulletin on preliminary crash statistics (December 1984).

* The pre-RBT average is calculated from the statistics for 1977-1982 with seasonal adjustments for motor cyclists and pedestrians.

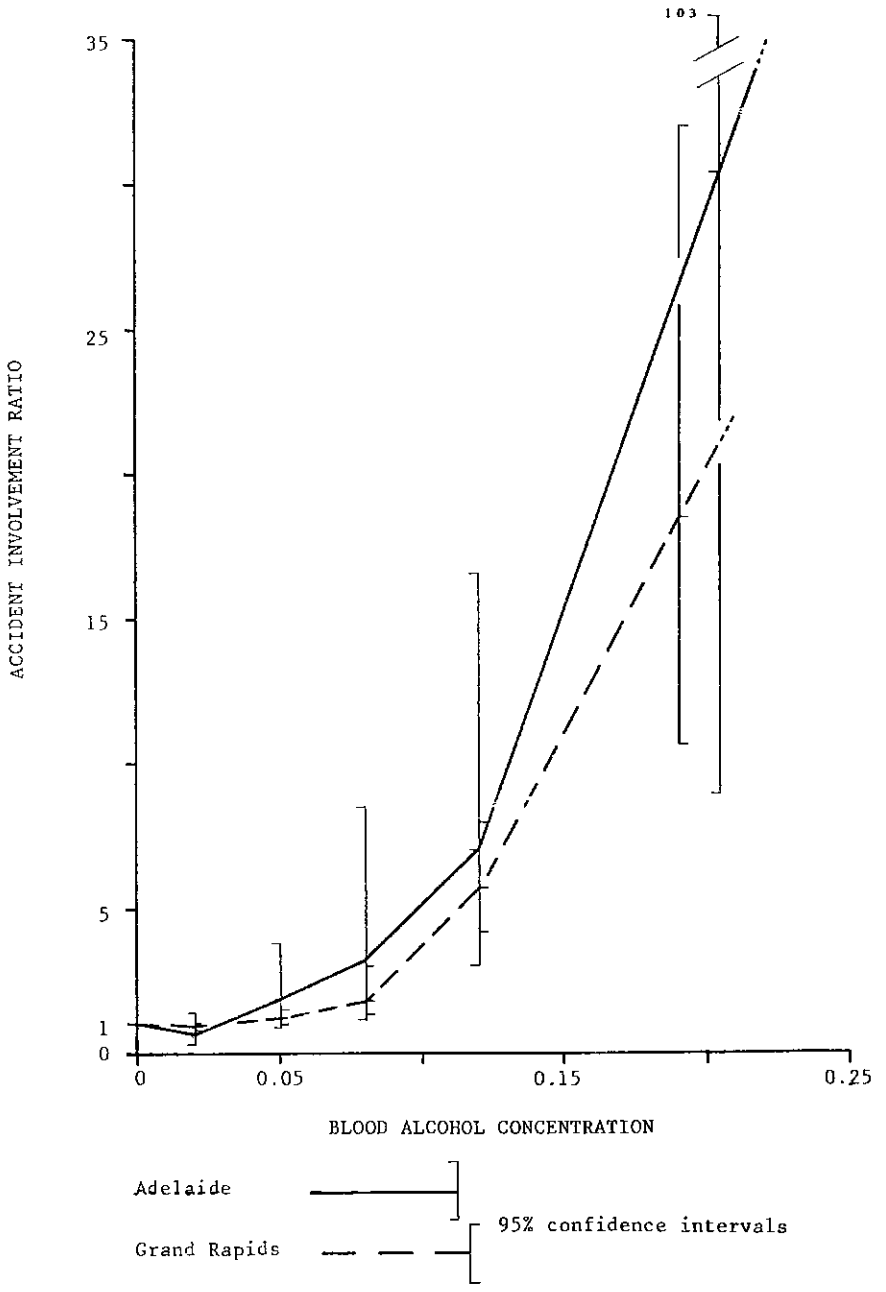


Figure 5.1. Accident involvement ratio and the blood alcohol concentration of the driver (Reproduced with the kind permission of McLean et al. (1983)).

**Table 5.2 Number of fatalities to end of each month in 1983 and 1984**

| | Pre-RBT average | 1983* | | 1984** | |
|---|---|---|---|---|---|
| | | No. | % change | No. | % change |
| *Cumulative to end of*** | | | | | |
| January | 105.6 | 70 | −33.7 | 84 | −20.5 |
| February | 204.4 | 127 | −37.9 | 162 | −20.7 |
| March | 310.0 | 218 | −29.7 | 267 | −13.9 |
| April | 417.9 | 309 | −26.1 | 336 | −19.6 |
| May | 529.7 | 388 | −26.8 | 434 | −18.1 |
| June | 637.8 | 467 | −26.8 | 523 | −18.0 |
| July | 749.6 | 548 | −26.9 | 579 | −22.8 |
| August | 861.4 | 627 | −27.2 | 669 | −22.3 |
| September | 969.6 | 713 | −26.5 | 752 | −22.4 |
| October | 1,081.2 | 790 | −26.9 | 830 | −23.2 |
| November | 1,189.4 | 873 | −26.6 | 928 | −22.0 |
| December | 1,301.0 | 966 | −25.7 | 1,034 | −20.5 |

*Source:* Traffic Accident Research Unit's monthly bulletins on preliminary crash statistics.
* 1983 and 1984 year-to-date figures.
** Preliminary figures only for 1984.

up by 4.3% on the 1983 figure. Once again, as Table 5.3 shows, the biggest reductions occurred for passengers and drivers, again in line with the expected impact of random breath testing. The greater change in the number of fatalities than in casualties might also be interpreted as indicating a shift down the scale of severity of accidents. Since the severity of accidents is correlated with BAC levels, such a shift would be expected if drivers limited their drinking and so had lower BACs as a result of the deterrent effect of random breath testing.

*To what extent has random breath testing reduced the road toll?*

Although it seems highly likely that random breath testing has contributed to the reduction in road accident fatalities and casualties, other factors such as the state of the economy, the number of cars on the road, and population growth are also

**Table 5.3 Number of casualties (people injured) in New South Wales by year and road user type**

| | Pre-RBT average | 1983* | | 1984** | |
|---|---|---|---|---|---|
| | | No. | % change | No. | % change |
| Drivers | 15,520 | 13,023 | −16.1 | 14,067 | −9.4 |
| Passengers | 13,344 | 10,613 | −20.5 | 10,557 | −20.9 |
| Pedestrians | 4,422 | 4,175 | −5.6 | 4,351 | −1.6 |
| Motor cyclists | 4,893 | 5,559 | +13.6 | 5,694 | +16.4 |
| Pedal cyclists | 1,225 | 1,550 | +26.5 | 1,749 | +42.8 |
| Other | 25 | 22 | −12.0 | 19 | −24.0 |
| TOTAL | 39,429 | 34,942 | −11.4 | 36,437 | −7.7 |

*Source:* Traffic Accident Research Unit's monthly bulletins on preliminary crash statistics.

likely to have played a role. Disentangling the two sets of effects is quite difficult, but several sources of data (mostly related to fatalities rather than casualties) allow us to make some progress toward this goal.

*Changes in the number of fatalities since 1960*

First, we need to see the changes in the number of fatalities in historical context: how do the post-random breath testing changes compare with earlier changes? Table 5.4 shows the number of people killed in road accidents each year since 1960 together with the percentage change from one year to the next. It is quite clear from this table that the reduction from 1982 to 1983, the first year after the introduction of random breath testing, constituted the greatest drop since 1960. The singularity and magnitude of this fall in the number of fatalities is confirmed by Figure 5.2 which plots the number of crash fatalities per 100,000 population to take account of the effects of population growth. Although there were fluctuations in the yearly figures, the 1983 figure represented a marked reduction from earlier figures. The 1984 figure showed a slight increase over 1983 but was still well below previous years' figures.

**Table 5.4 Number of people killed in road accidents by year (1960-1984) and by area**

| | New South Wales | | Rest of Australia | |
|---|---|---|---|---|
| | No. | % change from previous year | No. | % change from previous year |
| 1960 | 939 | — | 1,529 | — |
| 1961 | 934 | −0.5 | 1,608 | +5.2 |
| 1962 | 876 | −6.2 | 1,659 | +3.3 |
| 1963 | 900 | +2.7 | 1,698 | +2.3 |
| 1964 | 1,010 | +12.2 | 1,956 | +13.2 |
| 1965 | 1,151 | +14.0 | 2,013 | +2.9 |
| 1966 | 1,143 | −0.7 | 2,099 | +4.3 |
| 1967 | 1,117 | −2.3 | 2,049 | −2.4 |
| 1968 | 1,211 | +8.4 | 2,171 | +6.0 |
| 1969 | 1,188 | −1.9 | 2,314 | +6.6 |
| 1970 | 1,309 | +10.2 | 2,489 | +7.6 |
| 1971 | 1,249 | −4.8 | 2,341 | −5.9 |
| 1972 | 1,092 | −12.6 | 2,330 | −0.5 |
| 1973 | 1,230 | +12.6 | 2,449 | +5.1 |
| 1974 | 1,275 | +3.7 | 2,297 | −6.2 |
| 1975 | 1,288 | +1.0 | 2,406 | +4.7 |
| 1976 | 1,264 | −1.9 | 2,319 | −3.6 |
| 1977 | 1,268 | +0.3 | 2,310 | −0.4 |
| 1978 | 1,384 | +9.1 | 2,321 | +0.5 |
| 1979 | 1,290 | −6.8 | 2,218 | −4.4 |
| 1980 | 1,303 | +1.0 | 1,971 | −11.1 |
| 1981 | 1,291 | −0.9 | 2,030 | +3.0 |
| 1982 | 1,253 | −2.9 | 1,999 | −1.5 |
| 1983 | 966 | **−22.9** | 1,790 | **−10.5** |
| 1984 | 1,035 | +7.1 | 1,776 | −0.8 |

*Source: Summary of National Road Crash Statistics, January 1985.* Canberra: Office of Road Safety.

* Preliminary figures.

Second, we need to see the post-random breath testing changes in their national context. If the fall in the road toll is confined to or stronger in New South Wales, the case for the effect being a function of random breath testing is strengthened. On the other hand, other factors such as the influence of the economy would be implicated if the effect was found elsewhere in Australia. However, as Homel (1985) points out, this form of control is not perfect because the operation of economic and other forces is not identical across all states and other states have introduced drink-drive countermeasures at various stages. Two states, in particular, deserve special attention because they introduced random breath testing at or about the same time as New South Wales — the Australian Capital Territory on the same date, and Tasmania two weeks later, on 1 January 1983.

Table 5.5 presents a comparison (within all states) of the 1983 and 1984 figures with an average over the previous six years (to take account of the year-to-year fluctuations). The reduction in fatalities in New South Wales was not the highest of all the states — it was "beaten" by Western Australia in both 1983 and 1984, and in 1983 by Tasmania, which had just introduced random breath testing. However, the decrease in New South Wales was greater (and considerably so in 1983) than the average for all the other states combined (excluding Tasmania and the Australian Capital Territory). Tasmania and the Australian Capital Territory provide an interesting comparison for the New South Wales experience. The pattern of change in fatalities in Tasmania was similar to the New South Wales pattern though the 1983 reduction was more marked. In sharp contrast, the Australian Capital Territory showed no reduction and even a considerable increase in 1984, although the small numbers involved make comparisons of this sort less reliable. One difference between Tasmania and New South Wales on the one hand, and the Australian Capital Territory on the other, is that both those states had the .05 limit whereas the Australian Capital Territory had and still has .08. Other differences may be in the level of enforcement, but as yet there are no published data available to test this hypothesis.

The large reductions in 1983 and 1984 for Western Australia are interesting and may be partly a function of "random check stops" like those operating in the Christmas/New Year period of 1980/1981 (Cameron & Sanderson, 1982). Although Western Australia does not have legislation for random breath testing, it does operate de facto random breath testing in blitzes (Minister of Transport, *West Australian*, 7 January 1983).

Further data on the national comparisons are provided by a comparison of the number of fatal *crashes* in New South Wales and the rest of Australia (Figures 5.3 and 5.4, supplied by Homel).

As Homel (1985) points out, the number of crashes is a "slightly more reliable statistic" than the number of fatalities because it is not subject to the fluctuations in the number of persons killed in a crash. Although the rest of Australia showed a decrease from 1983, this fall was a more marked continuation of a prior downward trend. For New South Wales, however, the drop was more sudden and followed a virtual steady state. As Homel (1985) concludes from similar data, "this pattern is very much what would be predicted if RBT were the key causal agent" (p.9). On the basis of the data in Table 5.5, however, and the fall in the rest of Australia, economic and other factors must be considered to have contributed to the reduction in the number of fatalities in New South Wales, and also in Tasmania.


Figure 5.2. Crash fatalities per 100,000 population for New South Wales and Australia by year

**Table 5.5 Number of people killed in road accidents by year and state**

| | Average 1977–1982* | 1983 | | 1984 | |
|---|---|---|---|---|---|
| | | No. | % change** | No. | % change |
| **New South Wales** | 1,298.2 | 966 | −25.6 | 1,035 | −20.3 |
| Victoria | 800.3 | 664 | −17.0 | 645 | −19.4 |
| Queensland | 591.6 | 510 | −13.8 | 506 | −14.5 |
| Western Australia | 280.2 | 203 | −27.6 | 221 | −21.1 |
| South Australia | 278.2 | 266 | −4.4 | 232 | −16.6 |
| Tasmania | 103.0 | 70 | −32.0 | 85 | −17.5 |
| Northern Territory | 60.2 | 49 | −18.6 | 50 | −16.9 |
| Australian Capital Territory | 28.0 | 28 | 0.0 | 37 | +32.1 |
| **AUSTRALIA excl NSW, ACT and TAS*** ** | 2,010.5 | 1,692 | −15.8 | 1,654 | −17.7 |

* Not adjusted for seasonal fluctuations as Traffic Accident Research Unit's pre-RBT average.
** Preliminary figures.
*** Random breath testing was introduced in Australian Capital Territory (ACT) on 17 December 1982 and in Tasmania on 1 January 1983.

*Statistical modelling techniques*

Another attempt to disentangle the effect of random breath testing from the influence of other (economic) factors on the road toll is provided by Thomson and Mavrolefterou (1984). They presented a case for the influence of economic factors, mediated by the demand for travel, on the number of road accident fatalities. Using multivariate modelling to separate the effect of random breath testing from the effect of economic activity (measured in terms of gross manufacturing product for New South Wales), they concluded that about 42% of the reduction in driver fatalities (until June 1983) was associated with random breath testing. This form of analysis is in the tradition of multivariate modelling conducted by Votey (1984), but attracts criticism from several quarters (Cohen, 1984; Ross, 1982) on methodological grounds. One of the relevant criticisms of this form of analysis is related to the selection of variables which are entered into the analysis. Another, particular to Thomson and Mavrolefterou's paper, concerns the isolated treatment of the New South Wales data, without the inclusion of data from the other states to act as a control series. Despite the problems, if we accept these results, they indicate a significant and considerable reduction in the road toll directly attributable to random breath testing.

*BAC levels of drivers killed in road crashes*

Perhaps the most conclusive evidence for the impact of random breath testing lies in the change, if any, in the proportion of fatally injured drivers with illegal BACs. If random breath testing has had an effect, this proportion should have fallen. Table 5.6 shows the number of drivers and riders by BAC group and year. Like the earlier data, these statistics were prepared by the Traffic Accident Research Unit. They include both drivers and riders — controllers — but for simplicity's sake will be referred to simply as drivers. It should be noted that the 1984 data are preliminary figures and that BACs were not available for all dead drivers; there was little change, however, across years in the proportion of the totals that were known.

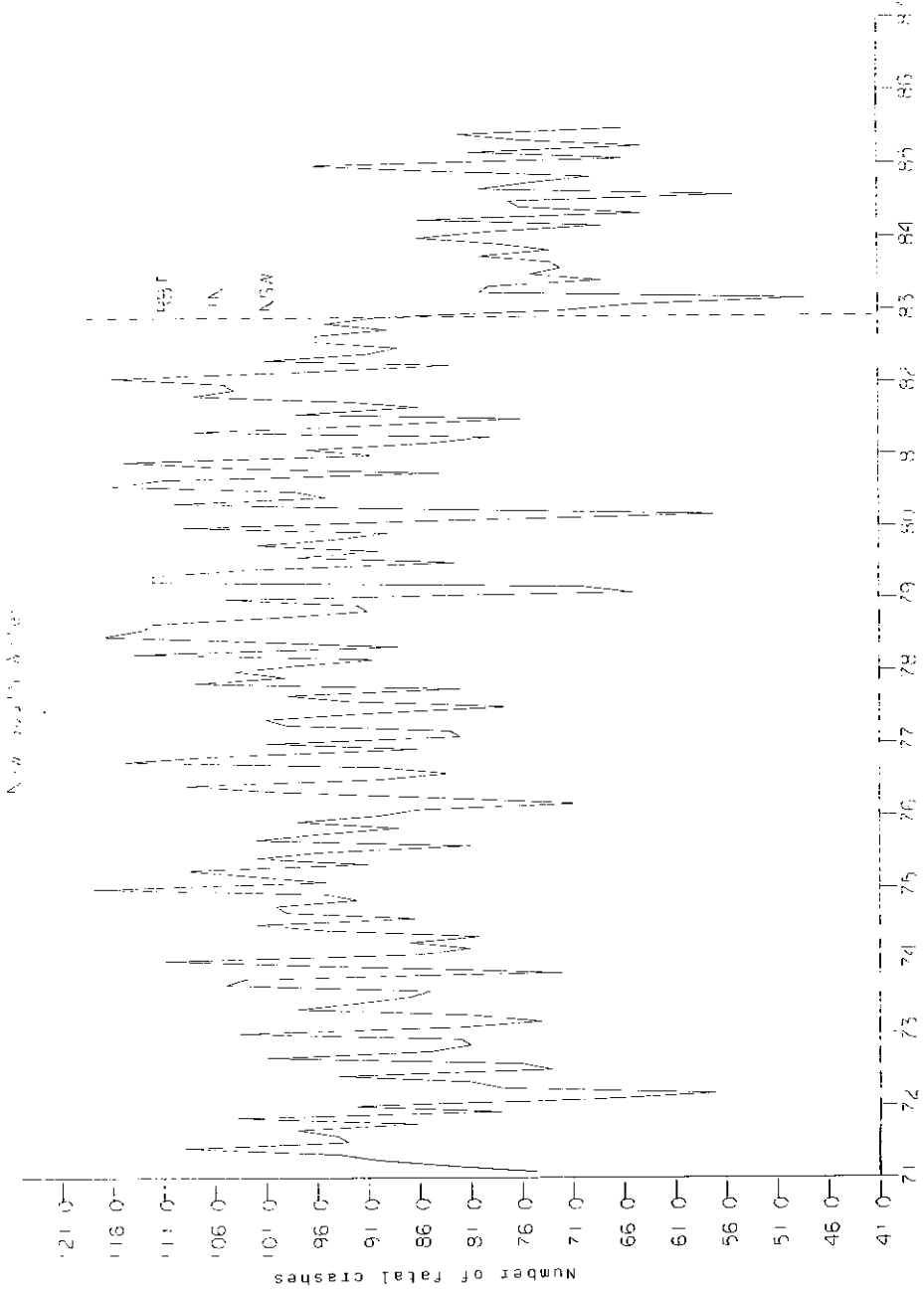


Figure 5.3. Number of fatal crashes in New South Wales by year

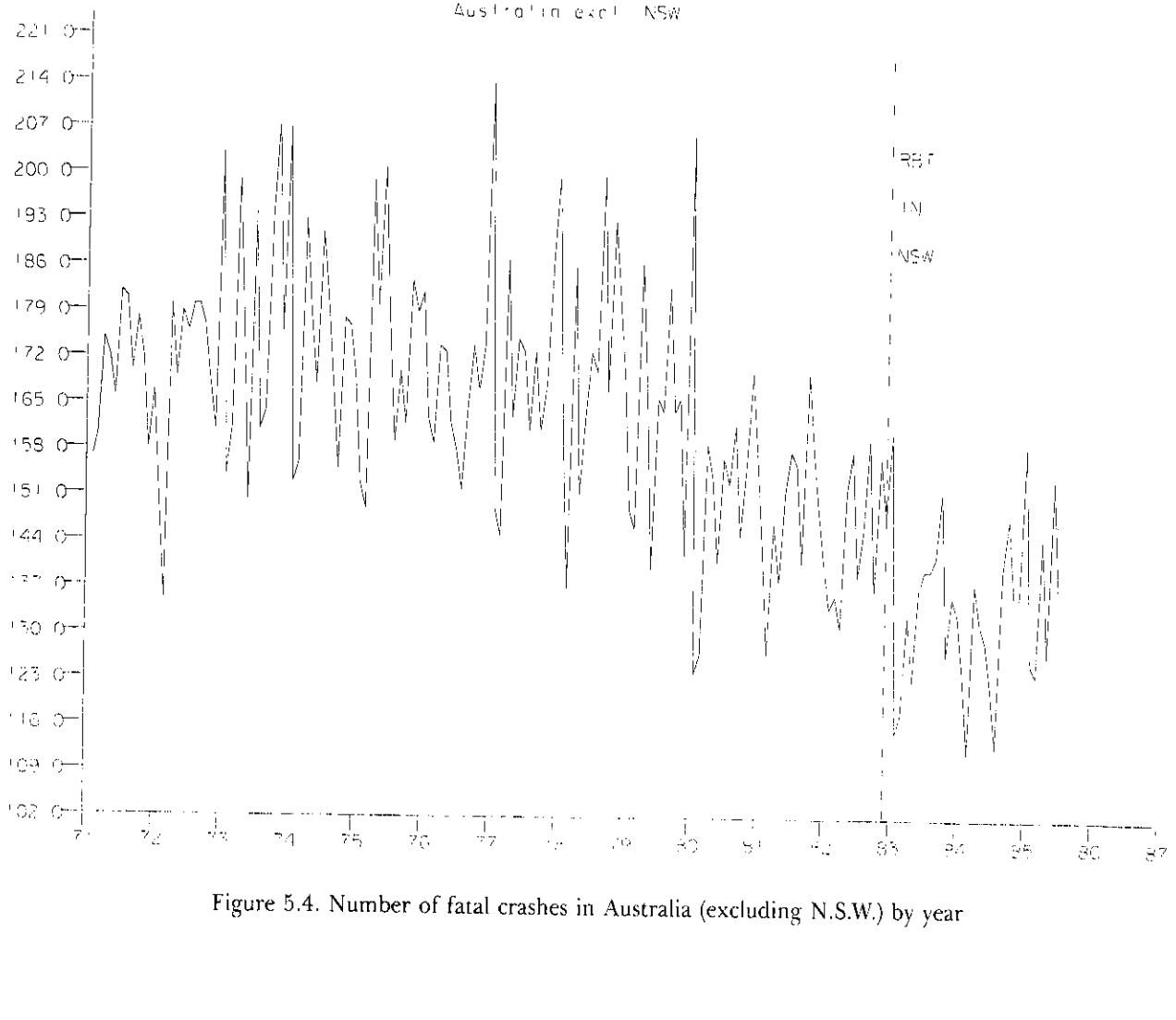


Figure 5.4. Number of fatal crashes in Australia (excluding N.S.W.) by year

In accordance with the pattern predicted by the influence of random breath testing, the proportion of fatally injured drivers with illegal BACs fell from 42.3% before its introduction to 36.4% in 1983, and further still to 32.3% in 1984. Equally important, the proportion in the high PCA range (.15 and above) fell from 26.5% to 24.0% and then to 20.0% in 1984. On the other side of the coin, the proportion of drivers with zero alcohol readings rose concurrently from 50.8% prior to random breath testing to 51.0% in 1983 and 63.2% in 1984. The changes were quite evenly distributed across male and female drivers, and across age groups (under 25 years, and 25 and over), although women and older drivers were less likely to have illegal BACs or BACs in the high range than men and younger drivers. This finding is consistent with the survey findings on the groups most likely to have changed their behaviour (Chapter 6) and with court statistics on the groups represented among offenders (Chapter 4).

Another interesting feature of the results in Table 5.6 is the over-representation of BACs in the high range compared with the distribution of BACs in apprehended offenders (Chapter 4) and compared with the BACs for road accident casualties blood-tested in hospital. Whereas over 60% of fatally injured drivers had readings of .15 and above, about 53% of injured admissions to hospital, but less than 40% of apprehended offenders, had similar readings. This result is quite consistent with other studies (Ross, 1982) showing the increased likelihood of heavy alcohol consumption with the increasing severity of the crash.

*Comparison with the effects of random breath testing in Victoria and South Australia*

As already indicated in Chapter 3, random breath testing in Victoria and South Australia has not been implemented with the same high level of enforcement, in either intensity or continuity of operation, as in New South Wales. The Victorian approach has been a relatively low level of ongoing enforcement, reinforced by periods of intensified random breath testing (Cameron & Sanderson, 1982; Jiggins, 1985). The blitz periods have generally lasted from 4 to 8 weeks in designated sectors of Melbourne during 1977, 1978 and 1979 and, most recently, in late 1983. The various blitz periods have been the subject of a series of evaluations in which

**Table 5.6 Blood alcohol concentration (BAC) of controllers* killed in New South Wales by year**

| | Pre-RBT average | | 1983 | | 1984 | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Nil | 262.0 | 50.8 | 216 | 57.0 | 256 | 63.2 |
| Positive (0.001-0.049) | 35.5 | 6.9 | 25 | 6.6 | 18 | 4.4 |
| Low (0.05-0.079) | 16.6 | 3.2 | 12 | 3.2 | 11 | 2.7 |
| Medium (0.079-0.149) | 64.6 | 12.5 | 35 | 9.2 | 39 | 9.6 |
| High (0.15 & over) | 136.6 | 26.5 | 91 | 24.0 | 81 | 20.0 |
| Total illegal | 217.8 | 42.3 | 138 | 36.4 | 131 | 32.3 |
| Total tested | 515.5 | | 379 | | 405 | |
| Exempt | 66.6 | | 49 | | 41 | |
| Unknown | 61 | | 54 | | 63 | |

*Source:* Traffic Accident Research Unit's monthly bulletins on preliminary crash statistics.
* Controllers refers to motor vehicle drivers and motor cycle riders.

the incidence of night-time fatal and casualty accidents in the targeted sector was compared with the rate in the other control sectors, or with the day-time rate in the same areas (Cameron, Vulcan, & Strang, 1980; Cameron & Strang, 1982; Armour et al., 1985). The results of these evaluations indicated significant reductions (of the order of 36% in 1977, 23% in 1978-79, and 18% in 1983) in the number of night-time fatal crashes and serious casualty crashes, together with a fall in the proportion of single-vehicle driver casualties with illegal BACs. Since the evaluations unfortunately included only the weeks of the intensified enforcement and the following two weeks, the longevity of the effects is difficult to determine.

In South Australia, the reported effects of random breath testing on the road toll have apparently been slight, in line with the low-key level of enforcement (Bungey & Sutton, 1983; McLean et al., 1984). McLean et al. (1984) concluded that there was no convincing evidence that random breath testing contributed to the decrease in fatal and casualty accidents which occurred primarily in country areas. There was, however, "a short-lived reduction in the late-night casualty accidents, including single vehicle crashes, in the metropolitan area" following the introduction of random breath testing (p.2.5). In addition, there was an increase in the proportion of these accidents occurring on back streets rather than on main roads, suggesting an increase in back street use to avoid random breath testing.

In neither state, then, was the impact of random breath testing on the road toll as strong or continuous as in New South Wales. The extent of the impact is consistent with the relative levels of enforcement in these three states.

*Summary*

Following the introduction of random breath testing in New South Wales, there was a substantial reduction in the number of people killed and injured in road accidents. This fall in the road toll was greater than any previous decrease and it was also greater than the concurrent reduction in the other states of Australia which did not introduce random breath testing at or about the same time.

Several features of the results are consistent with an effect from random breath testing. First, the greatest reductions for fatalities and casualties were for drivers and passengers rather than other types of road user. Second, the reduction was greater for fatalities than casualties, suggesting a shift down the scale of accident severity in line with lesser BACs and limited drinking behaviour. Third, and most important, there was a fall in the number of fatally injured drivers with illegal BACs and also with BACs in the high range (.15 and over). The fact that this decline in the numbers with illegal and high BACs continued and increased in 1984 suggests more than a short-term deterrent effect from random breath testing.

Because random breath testing was introduced in New South Wales (and in Tasmania and the Australian Capital Territory) at a time of quite severe economic recession, it is difficult to separate the effects of random breath testing from the effects of decreased economic activity. However, the greater decrease in the road toll in New South Wales than in the rest of Australia (apart from Western Australia) lends support to the extra impact of random breath testing. The fact that the small increase in the number of fatalities in 1984 was accompanied by a further fall in the proportion of fatalities involving alcohol suggests that other factors, possibly related to the economy, were involved in the increase.

Finally, these results compare very favourably with the effects associated with random breath testing in Victoria and South Australia. In both states, the levels of enforcement were lower and the effects less dramatic and shorter-lived.

## CHAPTER 6

# Community Attitudes Towards Random Breath Testing

"Tapping" community attitudes towards random breath testing is an important aspect of the evaluation of the effects of random breath testing for several reasons. First, as Snortum (1984) points out, some rudimentary knowledge and acceptance of the law is a necessary pre-condition for compliance with the law. Indeed, it may be very difficult, if not impossible, to introduce legislation on an issue if the prevailing social climate is antagonistic. Second, community attitudes may provide a good indication of the way the law is operating and of the effects it is having on the community. Unlike other criminal offences, drink-driving is a relatively common offence, with over 50% of survey respondents in New South Wales (Homel, 1983a) and in the Australian Capital Territory (Coventry et al., 1982) and 49% in South Australia (Bungey & Sutton, 1983) admitting to driving at some time when they believed their blood alcohol concentration was over the legal limit. Because drink-driving is so widespread in the community, surveys provide a good vehicle for testing the impact of drink-driving countermeasures such as random breath testing. The evidence for such impact may take several forms.

First, reports from members of the public can indicate who has been exposed to random breath testing and in what way. Have particular groups been under-exposed to its operation? Second, although reported changes in behaviour are not necessarily an accurate measure of actual changes, they provide a measure for evaluation that is not otherwise available and which may relate to the degree of exposure to random breath testing. Third, community attitudes in the form of perceptions about the increased likelihood of apprehension for drink-driving offences are important variables in assessing the likely deterrent effect of random breath testing and in testing the validity of the deterrence model. Fourth, increased public approval of random breath testing may indicate underlying changes in community attitudes towards drink-driving and so reflect the potential impact of legislation on public attitudes. The educative or "moral eye-opener" influence of the law, outlined by Andenaes (1977), is likely to be a slow and gradual process, but in the long term it is likely to be more effective than deterrent measures alone, bringing with it reduced social pressures to drink and then drive.

This chapter presents the results of several surveys and a group discussion study, all carried out to investigate the attitudinal and behavioural reaction of the community to the implementation of random breath testing. These studies covered three broad areas — agreement with random breath testing, exposure to its operation, and reported changes in drink-driving behaviours and attitudes. Although the findings of Job (1983) are included here, the results of the three surveys commissioned by the Traffic Accident Research Unit in November 1982, May 1983 and August 1984 will be reported in more detail in that unit's separate report.

*Agreement with random breath testing*

The first survey in New South Wales which specifically asked about random breath testing was carried out in 1971 — 42% of respondents at that time were in favour of random breath testing (Freedman et al., 1973). Since then, a number of surveys have asked about random breath testing, both in New South Wales and in the other states, using different techniques such as telephone and mail surveys and personal interviews. The longest, consistent series of surveys using the same questions and the same sampling frame and form of interview was conducted by McNair Anderson. The first of their five surveys was in March 1979, several years before random breath testing was introduced in New South Wales and several years after its introduction in Victoria. Their last two surveys on this issue were commissioned by the Bureau of Crime Statistics and Research and were carried out (in New South Wales only) in March 1983 and March 1984, 3 months and 15 months respectively after the introduction of random breath testing. Table 6.1 presents the results of the five surveys; more detailed results of the 1983 and 1984 surveys are available in Cashmore (1983) and Cashmore and Vignes (1984).

**Table 6.1 Agreement (%) with random breath testing by date of survey**

| | Mar 1979 | Dec 1981 | Dec 1982 | Mar 1983 | Mar 1984 |
|---|---|---|---|---|---|
| Agree | 66.0 | 80.1 | 77.4 | 90.2 | 91.5 |
| Disagree | 33.1 | 18.9 | 21.0 | 9.8 | 8.5 |
| Not sure/neutral | 0.9 | 1.1 | 1.6 | 0.0 | 0.0 |

Approval of random breath testing has increased markedly since 1979, and since Freedman et al.'s (1973) survey. The trend has been consistent, apart from a slight fall in December 1982, the month in which random breath testing was introduced; this "blip" in the otherwise upward trend may reflect some apprehension and uncertainty about the way in which random breath testing would operate.

The most interesting feature is the increase in approval *after* its introduction, an increase which has been maintained for at least 15 months (March 1984). This increase is consistent with the results of other surveys in New South Wales and in other states which have introduced random breath testing. Job (1983) reported a jump in favourable ratings from 63.8% in November 1982 to 85.3% in May 1983. Homel's (1983a) February survey results also indicate a similar level of approval at 88.3%. In South Australia, the rise in approval was less dramatic, from 55% in September 1981 (one month before its introduction there) to 63% in September 1982 (Fischer & Lewis, 1982 cited by Bungey & Sutton, 1983) and 77.8% in October 1983 (Australian Bureau of Statistics, 1984). However, the effects of random breath testing on the road toll were less dramatic, the level of enforcement less intensive and media publicity less enthusiastic and supportive in South Australia than in New South Wales. The Victorian results provide an interesting comparison, too, since random breath testing was introduced there much earlier (in July 1976) than elsewhere, though less wholeheartedly than in New South Wales. Nearly three years after random breath testing was introduced in Victoria (in March 1979), approval ratings of random breath testing were 89% compared with 66% in New South Wales at the same time. In December 1982, approval in Victoria was 93% compared with 77% in New South Wales. The high level of approval of random breath testing *after* its introduction was similar in both states — in both cases, over 90%.

The most likely explanation for the rise in approval following the introduction of random breath testing lies in the public's awareness of the associated fall in the road toll. As the results in Chapter 2 indicate, there was a large number of newspaper articles publicising the drop in the number of road deaths and injuries and attributing this drop to random breath testing. Homel (1983a) found that nearly three quarters (73.5%) of respondents in his survey referred to the reduced road toll in response to a question about the effects of random breath testing in New South Wales. Similarly, participants in Elliott and Shanahan's (1983) group discussion study articulated the impact of random breath testing on the road toll. In the words of one participant:

> I think things were getting worse and worse. I used to listen to "Night Watch" on a Sunday morning and it had the most horrific accidents on it but, since RBT came in, you don't see half of what used to go on on it (p.30).

Because of the publicity given to these positive effects, some caution should be exercised in interpreting the high approval rates after the introduction of random breath testing because such awareness may result in a minor inflation in approval ratings. Some people may be unwilling to admit that they disapprove of a measure which is so widely claimed to be saving lives. Fischer and Lewis (1982) demonstrated the influence of such factors by deliberately "leading" respondents with either positive or negative lead-up statements to questions about random breath testing. For example, when prefaced with a statement about the positive impact of random breath testing on a previously high road toll, 68.4% of respondents in Adelaide were in favour of random breath testing, compared with 53.5% when the lead-up statement was concerned with civil liberties and suggested that random breath testing had little impact on the road toll. When no lead-up comments were used, the approval rate was 54.4%. There were no lead-up comments to the McNair Anderson surveys, but it is possible that media publicity may have created a positive bias. Any effect would be very unlikely to be as strong as that in Fischer and Lewis's (1983) study because of the direct and close association between the statement and the question in their study and because newspaper articles also carried negative evaluations (see Chapter 2).

Support for the .05 legal limit was not as strong as approval for random breath testing, but it increased since the question was first asked in a McNair Anderson survey. In March 1979, 52.5% of respondents favoured the .08 limit and 36.5% favoured .05; in 1983 and 1984, 55.5% preferred .05 to .08, a reversal of preferences from 1979. In all three years, women favoured .05 more than men. Women also indicated stronger levels of approval of random breath testing than men, a consistent finding across surveys throughout Australia (Australian Bureau of Statistics, 1984; Coventry el al., 1982; Fischer & Lewis, 1982: Freedman et al., 1973; Homel, 1983a). As we will see later, there were also differences between men and women in their rate of exposure to random breath testing and in the likelihood that they changed their drinking and driving behaviour in response to random breath testing.

*Exposure to random breath testing*

Exposure to random breath testing may occur in several ways — by media publicity through advertising and news stories (see Chapter 2), by seeing random breath testing units operating on the roadside, by knowing others who have been tested, and most directly by being breath tested or being in a car in which the driver was tested.

Awareness of random breath testing in New South Wales has been very high since its introduction. In Homel's (1983a) February survey, 81.8% of respondents mentioned random breath testing when asked about new drink-driving countermeasures; 95.5% of the sample had "seen, heard or read" some publicity about random breath testing, indicating very high penetration in the ten weeks following its introduction. Similarly, participants in the group discussions (Elliott & Shanahan, 1983) were well aware of the publicity, particularly of the television advertisement featuring the slogan, "How will you go when you sit for the test?". Although the participants came to the group discussion expecting to talk about drinking in general and their own drinking habits, discussion quickly and spontaneously turned to random breath testing, supporting anecdotal evidence that random breath testing was a common topic of discussion at dinner parties and at drinking sessions in hotels.

Several surveys tapped the exposure rate to the actual operation of random breath testing in the first few months of its operation (Cashmore, 1983; Homel, 1983a; Job, 1983). The consistency in results, summarised in Table 6.2, should increase our confidence in the reliability of the findings, when the variations in sampling technique and type of sample are taken into account. It should be noted that the McNair Anderson surveys (Cashmore, 1983; Cashmore & Vignes, 1984) include two sets of figures — one for the total sample and one for an estimated group of those who were both drinkers and drivers. Although the method of estimating the drink/drive group was indirect, being based on their responses to a question about changed behaviour (see Cashmore & Vignes, 1984, p.8), the percentages obtained were similar to those found in other surveys by more direct questions (Homel, 1983a; Job, 1983). This drink/drive group is also the best group for comparison with Job's (1983) sample of licensed drivers who drank at least once a year. As expected, the exposure of those who were both drivers and drinkers is higher than for the total sample. The total sample figures from the McNair Anderson surveys and Homel's (1983a,b) sample figures are comparable. For further comparisons across figures, it should be noted that both Homel's and Job's figures on *direct* exposure include passengers as well as the driver of cars which were stopped for random breath testing. The Traffic Accident Research Unit's estimates of 1.5 occupants per vehicle (from their seat-belt wearing surveys) may be used to provide comparable estimates between the McNair Anderson and the other two surveys.

It is also interesting to compare the level of exposure in New South Wales, several months after the introduction of random breath testing, with Victorian and South Australian figures. What is immediately obvious is the high exposure rates achieved in New South Wales in a few months, rates that are as high or higher than interstate rates after several years. In South Australia in October 1983, two years after random breath testing began, 15.9% of licensed drivers reported that they had been tested and 53.1% that they had seen a site in operation (Australian Bureau of Statistics, 1984). After two years of operation in Victoria (in September and October of 1978), 6.7% of drivers had been tested, 31.8% had seen a site and 44.2% knew someone who had been tested (Robinson, 1980). By March 1984, after 15 months of random breath testing in New South Wales, 22.2% of the total sample and 28% of the estimated driving group had been tested, and 65% of the total sample knew someone who had been tested (Cashmore & Vignes, 1984). As Homel (1983a) points out, these figures represent an extraordinarily high exposure rate in New South Wales and are evidence of a high degree of police visibility, especially in the first few months.

**Table 6.2 Summary of survey results on exposure to random breath testing**

| SURVEY/SOURCE | DATE | RESULTS |
|---|---|---|
| *% breath tested* | | |
| Cashmore (1983) | March 1983 | 7.8% of sample<br>10.3% of drink-drive |
| Cashmore & Vignes (1984) | March 1984 | 22.2% of sample<br>28.1% of drink/drive group |
| *% driver/passenger* | | |
| Homel (1983a) | February 1983 | 9.5% of sample |
| Homel (1983b) | April 1983 | 9.0% of Sydney sample |
| Job (1983) | May 1983 | 18.6% of drivers who drink at least once per year |
| *% knowing someone* | | |
| Cashmore (1983) | March 1983 | 48.5% of sample<br>53.4% of drink/drive group |
| Homel (1983a) | February 1983 | 48.3% of sample |
| Homel (1983b) | April 1983 | 48.0% of Sydney sample<br>63.8% of country sample |
| Job (1983) | May 1983 | 71.2% of drivers who also drink |
| Cashmore & Vignes (1984) | March 1984 | 65.0% of sample<br>68.5% of drink/drive group |
| *% seen/driven past* | | |
| Homel (1983a) | February 1983 | 44.5% of sample |
| Homel (1983b) | April 1983 | 47.0% of Sydney sample<br>46.2% of country sample |
| Job (1983) | May 1983 | 62.7% of drivers/also drink |

The exposure rates are consistent with police data on the number of tests conducted (Homel, 1983a) and the interstate comparisons reflect the relative levels of enforcement across the states and also within New South Wales. Homel (1985) found a significant correlation of .79 between the police figures on the number of tests conducted and the percentage of respondents who reported being tested in areas across New South Wales. Similarly, New South Wales had the highest level of enforcement and the highest exposure rate across states. In South Australia, 15.9% of drivers reported being tested, (after 195,000 tests were conducted there in the first two years of random breath testing); in Victoria, the figure was 6.7% (with about 65,000 tests in the first two years). In New South Wales, nearly a third of the sample estimated to be drivers had been tested by March 1984 and just over a million tests had been conducted by that time. With about 3.3 million licensed drivers in New South Wales, we could expect nearly a third to have been tested. This was, in fact, the basis of one of the advertisements about this time. As already pointed out in Chapter 3, this is only a rough estimate as it takes no account of people who have been tested more than once, or of licence holders who rarely drive. But even as a rough estimate, it provides a figure which is quite consistent with the survey results in New South Wales and which is a useful basis for comparison with other states.

A consistent finding across surveys is the differential rate of exposure across groups. Men, young drivers in general and young men in particular, were more likely to have been tested than women, older drivers and the retired and unemployed (Australian Bureau of Statistics, 1984; Cashmore, 1983; Cashmore & Vignes, 1984; Homel, 1983a, 1983b, 1983c). These same groups were also more likely to know someone who had been tested. (A summary of the results by age and sex is presented in Appendix XII for the various surveys.) These differences across groups reflect differences in driving patterns and in socialising patterns among these groups. As Cashmore (1983) and Homel (1983a) point out, it should not be surprising that the groups which tend to drive most are most likely to be breath tested.

Young men, in particular, drive more often at night (Homel, 1983a; McLean et al., 1980), and especially on Friday and Saturday nights when random breath testing is most likely to be operating. It is also possible that young men are more likely to be selected by police from a group of motorists for testing because of their well-known high representation in both accident statistics and drink-drive offender statistics. In fact, although young men are over-represented in crash statistics, they are less likely than older men involved in crashes to have illegal blood alcohol concentrations.

The different exposure rates across groups are particularly important in the light of Homel's (1985) finding that there is a relationship between the level of exposure to random breath testing and the perceived chances of being tested in the next month. Three measures of exposure were found to be significantly correlated with the perceived chance of being tested: being personally tested ($p = .029$), the recency and frequency of driving past a random breath testing site ($p = .011$) and most strongly, the number of other people known to have been tested ($p < .001$). More importantly, knowing a number of other people who have been tested was a significant factor in the model predicting Homel's arrest index, a composite of eight questions concerned with the perceived likelihood of being tested and of being "caught" for drink-driving. The perceived risk of arrest was, in turn, a significant factor in predicting changes in drinking behaviour and in travel arrangements as a result of random breath testing. Changes in drink-driving behaviour and attitudes have been tapped in a number of surveys and are the subject of the next section.

*Changes in reported drink-driving behaviours and attitudes*

One of the main aims of random breath testing is to deter drink-driving by increasing the perceived risk of apprehension. Prior to random breath testing, many motorists believed that they could avoid being breath tested because they were unlikely to be involved in a crash or commit a traffic offence. One way of testing the deterrent effect of random breath testing, then, is to ask whether drivers believe they have more chance of being "caught" if they drink-drive following the introduction of random breath testing. Job (1983) reported that most respondents (76.5%) felt that the chances of being charged with drink-driving had increased, with 26.5% believing they were much higher. In one of the very few pre-post comparisons available in this area, Job (1983) found a marked increase from November 1982 to May 1983 in the percentage of respondents reporting that they were more deterred from drink-driving by the possibility of being stopped by the police than by the risk of an accident. Job also found a significant decrease from November to May in the percentage of respondents who viewed a driver as "unlucky" if "caught" by the police for drink-driving; such a driver was more likely

to be regarded as "stupid or worse". Such changes in attitude indicate a deterrent effect from random breath testing, even though Homel's (1984) results from a comparison of the February and April surveys suggested some "wearing off" of the effect. As Homel and Ross (1982) point out, some weakening of perceived risk is expected as people re-assess their initial overestimates of the risk.

Ultimately, however, although changes in attitude and increases in the perceived risk of apprehension are important, the main test is the effect of random breath testing on behaviour. *Reported* changes of behaviour were investigated in several surveys (Cashmore, 1983; Cashmore & Vignes, 1984; Homel, 1983a, 1983c, 1984; Job, 1983) and in the group discussion study. Once again, the results of the surveys are quite consistent. For example, 52.6% of respondents classified as drinking motorists in the March 1983 McNair Anderson survey reported at least one change to their drinking or driving behaviour as a result of random breath testing. Homel's (1983b) figures were very similar — for February 1983 (Sydney) 57.9% and for April, 59.4% (Sydney) and 61.8% (country). The March 1984 figure was 58% (Cashmore & Vignes, 1984). These percentages are all markedly higher than the South Australian figure of 31.5% in October 1983 (Australian Bureau of Statistics, 1984), after two years of random breath testing there, but, as indicated earlier, the level of enforcement and the exposure rate were much lower than in New South Wales.

Were there any differences, like the differences in exposure rate, among the various groups in the community? If so, who was most likely to report having changed? Again the answers to these questions are strikingly consistent across surveys, both over time and across states. Men, the young, and again especially young men, and heavy drinkers were significantly more likely to have changed than other groups (Australian Bureau of Statistics, 1984; Cashmore, 1983; Cashmore & Vignes, 1984; Homel, 1983c), as the summary of results in Appendix XIII clearly shows. These groups also had the greatest need to change. Homel (1985) found that some of the significant factors predicting changes in behaviour were level of drinking, consciousness of social pressure to drink, and the perceived risk of being apprehended. Heavier drinkers, those who were aware of social pressure to drink, and those who admitted drink-driving since random breath testing were more likely than other groups to report changed behaviour.

The two McNair Anderson surveys and Homel's surveys all found that the main reason for *not* changing was the lack of any need to do so. Those who had not changed either drank or drove little or not at all, and they were more likely to be women than men, and older rather than younger. Only a small percentage (less than 2%) had not changed their behaviour because they did not expect to be caught (Cashmore, 1983; Cashmore & Vignes, 1984).

For those who had changed, the most common change was to limit the number of drinks when driving. About 40% of those reporting a change gave this change in both Homel's surveys and in the McNair Anderson surveys. Although women reported using this strategy, they were much more likely than men to refrain from drinking when driving. Other common strategies, especially for men, were to drink and have someone else drive or to drink at home. Women, in turn, were more likely to drive their partner home (Elliott & Shanahan, 1983), a change also reported in the South Australian survey in October 1983 (Australian Bureau of Statistics, 1984). This South Australian finding was also substantiated by the finding from McLean et al.'s (1984) roadside survey of a significant increase following the introduction of random breath testing in the proportion of cars with a female driver and a male passenger, especially between midnight and 2 a.m.

The change in men's behaviour of getting someone else to drive is particularly significant for the change it suggests in male social mores. As Gusfield (1979) and Freedman et al. (1973) point out, being "able to hold one's liquor" has been regarded "as an important component of a man's virility, and ability to drive after drinking seen as visible proof of his drinking capacity" (Henderson & Freedman, 1977, p.634). It may well be that random breath testing provides an acceptable excuse for men not to engage in such bravado. Women generally drink less than men and are therefore a better risk to drive, especially as it is also believed, and probably with some accuracy, that women are less likely than men to be stopped by police for breath testing. In some cases, also, it seems that womens driver's licences are seen as less important for work purposes and therefore more expendable (Elliott & Shanahan, 1983).

There are also other indications of reduced social pressure to drink since the introduction of random breath testing. Low alcohol beers and even non-alcohol drinks are more acceptable, and low alcohol beer, in particular, has been widely advertised in a way which increases its masculine image. As Elliott and Shanahan (1983) state, "those who adopt these strategies ... no longer feel different, un-Australian, outsiders, 'wowsers' or 'poofters' " (p.62). Other changes mentioned in the group discussions include a drop in the size of the drinking "school" so that there are fewer "shouts", drinking closer to home, and less "after-work" drinking.

Although there are positive indications of change in behaviours related to drink-driving, the picture is not all positive. Those who had most need to change (young, male, heavy beer-drinkers: Homel, 1985) still admitted drink-driving more than other groups. As Homel (1985) stated, "while many of those most at risk of drink-driving were making strenuous attempts to avoid it in future, they were still committing the offence at a higher rate than low risk groups" (p.152). Strategies to avoid random breath testing stations have also been reported (Elliott & Shanahan, 1983; Job, 1983). The most common avoidance techniques are to use back-streets or side-streets (a strategy that was responsible for a 20% increase overall and a 50% increase on weekends in late-night casualty accidents on back-streets in Adelaide: McLean et al., 1984), to stay out later beyond the expected police shifts, and to avoid frequently used locations by police.

In summary, a substantial proportion of drinking motorists have reported changing either their drinking and/or their driving behaviour to avoid drink-driving. The March 1984 survey results even indicate an increase in the percentage who reported changes from 52.6% in 1983 to 58% in 1984 (Cashmore & Vignes, 1984). Nevertheless, although those most needing to change changed most, they still admit to drink-driving more than other groups.

*Country-city differences*

An important feature of the survey results and of the group discussion study results is the difference between the city and the country. The main differences concern the perceived chances of being tested and arrested, and the type of behavioural change adopted to avoid drink-driving.

Homel (1983c) found that the perceived chances of being tested were significantly higher in the country than in Sydney. Homel's April 1983 survey showed a higher rate of exposure to random breath testing in the country, both in terms of the percentage tested (17.5%, versus 9.0%) and the percentage knowing someone who had been tested (63.8% versus 48.0%). However, there was considerable variation across country towns in line with the level of enforcement.

One reason for the higher perceived likelihood of being tested may be the limited number of alternative driving routes in country towns; a strategically placed police unit can, in some towns, cover most of the available routes in and out of town.

Country residents were also more worried about being breath tested if they did drink-drive, possibly because as the group discussions brought out clearly, a driver's licence was especially important in the country because the alternative means of transport are much more limited than in the city. Another worrying aspect was the prospect of being reported in the local paper for a drink-drive offence (Elliott & Shanahan, 1983). On the other hand, country residents were less certain than Sydney residents that they would be arrested if tested and found to be over the limit (Homel, 1983b). As Homel (1983b) and Elliott & Shanahan (1983) suggest, the local police officer is likely to be well-known in a country town and "amenable to pleas" for a second chance. In the words of one participant in a group discussion, "If they know you, they will let you off. Being locals, you know a fair few cops and I have often wondered if one that I know pulled me up, would he book me or not".

The type of strategy or change in behaviour to avoid drink-driving also varied between city and country residents. While those living in the city were most likely to change by drinking less when driving, country residents were much more reluctant to limit their drinking and were more likely to get someone else to drive (Cashmore, 1983; Cashmore & Vignes, 1984; Homel, 1983b). Similar results were also found in the South Australian survey (Australian Bureau of Statistics, 1984). While fewer alternative means of travel in the country limit the number of available strategies to avoid driving after drinking, there has also been some suggestion that some country residents are more entrenched in their drink-drive habits than city residents (Elliott & Shanahan, 1983, p.104).

In view of these findings and the views expressed in the group discussions, it is somewhat surprising that neither of the two McNair Anderson surveys showed any significant country-city difference in the level of agreement with random breath testing.

*Summary*

A number of surveys in New South Wales have "tapped" community attitudes to random breath testing and its effects on reported behaviours and attitudes. The results of these surveys have been quite consistent, a finding which, as indicated earlier, allows increased confidence in the reliability of the results.

In summary, these results allow a cautiously optimistic interpretation in that they indicate some substantial changes in attitudes and reported drink-drive behaviours. Public approval of random breath testing has become increasingly strong, especially following its introduction. Together with Job's (1983) finding that people are less likely to see a drink-driver who is caught by the police as "unlucky" than before random breath testing, increased approval of random breath testing may well indicate decreased acceptance of drink-driving. There has also been an increase in community knowledge about the drink-drive laws with the introduction of random breath testing (Homel, 1983a; Job 1983). As Andenaes (1977) points out, knowledge and acceptance of the law are two primary pre-conditions for compliance with the law.

Random breath testing in New South Wales has also achieved a high exposure rate — in several months, the exposure rates were higher in New South Wales than in several other states after several years of operation. As Homel (1985) found, being exposed to random breath testing, especially by knowing others who have

been tested, is an important factor in predicting both the perceived risk of arrest and the likelihood of changing drinking and travel behaviour to avoid drink-driving.

The survey results also indicated that a substantial proportion of drinking motorists, especially including those most needing to change, have reported changes in their behaviour. Several results, in particular, suggest a positive change. First, there is evidence in several reported strategies (especially, men not insisting on driving after drinking) that the social pressure to drink and then drive has decreased. This is an important change because peer pressure to drink may act as a powerful force in opposition to the threat of legal sanctions against drink-driving; a number of potential and admitted offenders reported that they were aware of social pressure to drink. For some, however, random breath testing provided a legitimate excuse for not drink-driving and those who then found it easier to refuse extra drinks increased their efforts not to drink-drive (Homel, 1984). Second, the percentage of respondents reporting at least one change in behaviour increased from 1983 to 1984, despite the predicted "wearing off" effect. While the percentage who had changed increased, the average number of changes per respondent fell, suggesting that people established patterns using a smaller repertoire of behaviours to avoid drink-driving (Cashmore & Vignes, 1984). Third, Homel (1983c) found that there was little "wearing off" in reported behavioural changes from February to April 1983, although there was some decrease in the perceived chances of being tested. As Homel (1983c) stated:

> This suggests that the initial behavioural impact may persist, at least to some extent, despite a more realistic assessment of the chances of being caught drinking and driving. In other words, the strictly deterrent aspects of RBT may be less important in the long run than its educative effects; the introduction of RBT may have provided some people with the incentive to change their drinking or driving behaviour in the direction which they already believed was "right" (p.618).

Despite this rosy picture, however, it is necessary to add a note of caution. Those most needing to change their behaviour still admitted drink-driving more than other groups, and there was some increase in their likelihood of drink-driving between February and April 1983 (Homel, 1983b).

## CHAPTER 7

# The Effect of Random Breath Testing on the Liquor Industry

The major objective of random breath testing is to deter the combination of drinking and driving — that is, to discourage drivers from drinking and those who have been drinking from driving. If successful in its deterrent effect, random breath testing could be expected to affect both the amount of drinking by people who are driving and the travel arrangements of those who have been drinking. This chapter is concerned with the effects on drinking behaviour and, as a result, the effect on alcohol sales and the liquor industry. The Traffic Accident Research Unit is concerned with data showing the effect of random breath testing on driving behaviour.

Drinking alcohol is an integral part of the lifestyle of many Australians and being a competent drinker, able to continue normal activities such as driving, is in Australia as in a number of Western countries (Gusfield, 1981), an aspect of the male sub-culture. In the first nationwide survey to cover drinking habits, 71% of men and 44% of women in 1980 reported that they drank alcohol on at least one day per week (National Heart Foundation Risk Factor Prevalence Study, 1981). As a result, about 6% of Australia's private final consumption expenditure is spent on alcohol and Australia ranks 12th in the world in per capita consumption of alcohol, and 4th in beer consumption (Commonwealth Department of Health, 1984).

Following the introduction of random breath testing, a number of surveys have indicated three main ways that people have changed their drinking behaviour to avoid drink-driving. Among those who have changed, the changes relate to how much they drink, what they drink, and where they drink. The most commonly reported change is to drink less when driving (Australian Bureau of Statistics, 1984; Cashmore & Vignes, 1984; Homel, 1983). It probably should not be surprising that people elect to drink less when driving. The legal limit and the number of drinks required to reach that limit were well publicised in the media when random breath testing was introduced and, as Sloane & Huebner (1980) found in their survey, limiting the number of drinks one has is seen as the easiest way to reduce alcohol consumption in a drinking situation. Other drinking-related strategies to avoid drink-driving include drinking low alcohol beverages (especially beer) and drinking more at home or at places closer to home.

Given these changes in drinking behaviour, it is not surprising that much of the vocal opposition to random breath testing has come from the liquor industry. This was also the case in other countries (Ross, 1982) and elsewhere in Australia (Bungey & Sutton, 1983). While recognising the need for the government to introduce road-safety measures to counteract the rising road toll, liquor industry associations have consistently expressed dissatisfaction with such drink-driving laws. Their main criticism has been the lack of convincing evidence that alcohol is the *major* cause of road crashes, *especially* at the legal limit of *.05* (Australian Hotels Association Submission to the Legislative Council Select Committee on Random Breath Testing in South Australia; see also articles in Figure 7.1).

Hotel and club associations have been particularly concerned with the expected adverse effect of random breath testing on their businesses. Much of the negative evaluation in the press of the effect of random breath testing has been related to the effect on hotels, clubs and related employment (Chapter 2). Two weeks after random breath testing was introduced, the Australian Hotels Association conducted a survey of publicans in New South Wales. It was later reported in the press (for example, *The Sydney Morning Herald,* 11 February 1983: see Figure 7.1) that more than 2,000 workers had been retrenched as a result of random breath testing. This was a particularly emotive cry at a time of recession and record unemployment. Unfortunately, it was based on unreliable data. The response of hoteliers to the survey was very low (at only 22%) and the sample of respondents cannot be considered a representative sample of hoteliers because it is highly likely that those most affected were motivated to respond while those unaffected were not. Simply multiplying the number of "lost" jobs by five, as was done (on the grounds that $22\% \times 5 = 100\%$), is therefore likely to give an exaggerated picture of the loss of unemployment.

While there is some evidence of a trend toward drinking at home rather than in hotels after the introduction of random breath testing (Cashmore, 1983), this shift in drinking behaviour had begun much earlier. In 1973-74, hotel sales constituted 70.8% of all alcohol sales but by 1980-81, they had dropped to 55.5%. During the same period, liquor stores, licensed clubs and grocers increased their share of the market, as sales of draught beer fell and sales of canned and bottled beer and wine increased (Commonwealth Department of Health, 1984). The change from draught beer to packaged beer suggests a change in drinking patterns away from hotels to home. Another change, the shift from beer to wine consumption, also suggests a change in drinking habits, especially related to the type of drinking occasion, who the alcohol is consumed with, and how much food is eaten at the same time (South, Swann & Vulcan, 1984). Both changes affect the likelihood of drink-driving and both were evident before the introduction of random breath testing. With the probable continuation of these trends, it is difficult to separate the effects of random breath testing from the effects of a change in consumer preferences and also from other effects such as the recession.

*Statistics on alcohol sales*

What independent data are available to assess the effect of random breath testing on the liquor industry? Unfortunately, what data are available do not allow a comprehensive analysis of alcohol sales before and after the introduction of random breath testing. The several sources of data all have shortcomings for the required analysis.

The first set of statistics from the Australian Bureau of Statistics (Catalogue No. 8503.0) provides quarterly estimates of the value of sales of beer, wine and spirits by state, and monthly estimates of retail sales by hotels, liquor stores and clubs by state. These figures do not provide a breakdown by type of liquor or by retail outlet. It is likely, however, that random breath testing has had a greater impact on the sale of high-alcohol drinks such as spirits, liqueurs and fortified wines than on wine and beer. Anecdotal evidence suggests that the consumption of such after-dinner drinks as liqueurs and ports has been most affected as people try to limit their alcohol consumption. There are also no available figures on the sales or consumption of low-alcohol beer although again there is good reason to believe that sales have risen as low-alcohol beers[1], heavily advertised, become more acceptable.[2] One estimate is that "low-alcohol beers comprise between 8% and 10% of the

current national sales of beer" (Commonwealth Department of Health, 1984). A South Australian survey in October 1983, after two years of random breath testing, found that an estimated 21% of the population had consumed low-alcohol beer in the three months before the survey. Because there is no breakdown of sales by retail outlet, it is not yet possible to tell whether the earlier trend to packaged beer and home-drinking has continued.

The second set of Australian Bureau of Statistics figures (Catalogue No. 8501.0) which do provide separate figures for beer, wine and spirits are not broken down by state; since random breath testing and other drink-driving measures are introduced via state legislation at different times, it is therefore not possible to evaluate the effects on sales without separate figures for each state.

A third set of statistics is provided by the Liquor Administration Board in its annual reports. These figures provide for the desired breakdown both by liquor type and by type of retail outlet for New South Wales. Unfortunately, these figures are based on a total assessment period for liquor licences and this period was changed from a calendar year to a financial year in 1983/84. The periods available for comparison are then the calendar years for 1981 and 1982 and an 18-month period from 1 January 1983 to 30 June 1984. Pro-rata estimates for the 1983 calendar year period have been calculated by the Board, at two-thirds of the 18-month period (shown in Table 7.1, together with the earlier calendar years). It should be noted that the 1983 figures are estimates, and may, in fact, be underestimates because an unweighted two-thirds may not fully account for the seasonally higher sales in the last half of the year.

*Comparison of alcohol sales across states*

Despite the problems with the various sets of data, we will try to draw out possible findings from what is available. To put the New South Wales figures into their national context, the two sets of data from the Australian Bureau of Statistics are compared across states (see Appendices XIV and XV). Figure 7.2 shows the value of retail sales of beer, wine and spirits (in $million) by quarter of year for New South Wales, Tasmania, and for the rest of Australia (Australia as a whole excluding these two states). New South Wales and Tasmania introduced random breath testing almost simultaneously (on 17 December 1982 and 1 January 1983, respectively) so a similar result might be expected in both states if there was an effect from random breath testing. As Figure 7.2 shows, this is the case, with both states showing almost identical trends in the value of alcohol sales, but a pattern different from the rest of Australia. The dotted lines in Figure 7.2 show the trend from December to December across years for each of the three graphs. These "trend" lines indicate that whereas neither New South Wales nor Tasmania show any increase in sales beyond 1981, the upward trend continued into 1982 and 1983 for the rest of Australia.

Although the consequences of the recession may not have been equal across Australia, it seems unlikely that dissimilarities in its effect could account for the difference; an effect from random breath testing is a more likely explanation.

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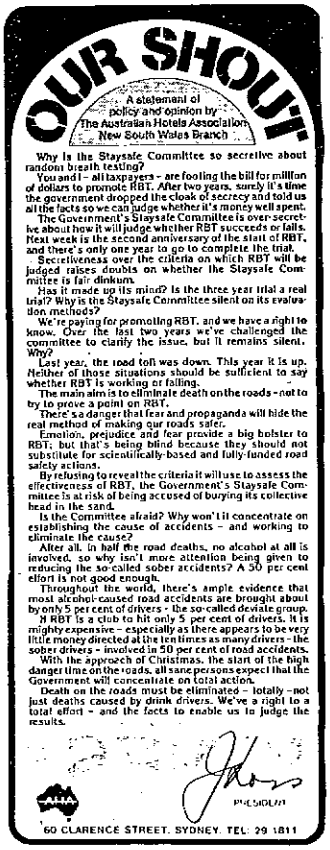
1. Most low-alcohol beers contain about 3% alcohol by volume compared with standard beers with about 5%; there are, however, several low-alcohol beers with only about 0.9% alcohol by volume.
2. These figures are not available from the breweries because of the fear that publication would prejudice their commercial interests.



OUR SHOUT

A statement of policy and opinion by The Australian Hotels Association New South Wales Branch

Why is the Staysafe Committee so secretive about random breath testing?

You and I – all taxpayers – are footing the bill for million of dollars to promote RBT. After two years, surely it's time the government dropped the cloak of secrecy and told us all the facts so we can judge whether it's money well spent.

The Government's Staysafe Committee is over-secretive about how it will judge whether RBT succeeds or fails. Next week is the second anniversary of the start of RBT, and there's only one year to go to complete the trial.

Secretiveness over the criteria on which RBT will be judged raises doubts on whether the Staysafe Committee is fair dinkum.

Has it made up its mind? Is the three year trial a real trial? Why is the Staysafe Committee silent on its evaluation methods?

We're paying for promoting RBT, and we have a right to know. Over the last two years we've challenged the committee to clarify the issue, but it remains silent. Why?

Last year, the road toll was down. This year it is up. Neither of those situations should be sufficient to say whether RBT is working or failing.

The main aim is to eliminate death on the roads – not to try to prove a point on RBT.

There's a danger that fear and propaganda will hide the real method of making our roads safer.

Emotion, prejudice and fear provide a big bolster to RBT; but that's being blind because they should not substitute for scientifically-based and fully-funded road safety actions.

By refusing to reveal the criteria it will use to assess the effectiveness of RBT, the Government's Staysafe Committee is at risk of being accused of burying its collective head in the sand.

Is the Committee afraid? Why won't it concentrate on establishing the cause of accidents – and working to eliminate the cause?

After all, in half the road deaths, no alcohol at all is involved, so why isn't more attention being given to reducing the so-called sober accidents? A 50 per cent effort is not good enough.

Throughout the world, there's ample evidence that most alcohol-caused road accidents are brought about by only 5 per cent of drivers – the so-called deviate group.

If RBT is a club to hit only 5 per cent of drivers, it is mighty expensive – especially as there appears to be very little money directed at the ten times as many drivers – the sober drivers – involved in 50 per cent of road accidents.

With the approach of Christmas, the start of the high danger time on the roads, all sane persons expect that the Government will concentrate on total action.

Death on the roads must be eliminated – totally – not just deaths caused by drink drivers. We've a right to a total effort – and the facts to enable us to judge the results.

PRESIDENT

60 CLARENCE STREET, SYDNEY. TEL: 29 1811

54 THE SUN-HERALD, Dec 9, 1984 54

**The Sydney Morning Herald, Friday. February 11, 1983** p9

# Breath tests blamed for lost jobs

**More than 2,000 hotel workers lost their jobs in the first two weeks of random breath testing, according to a survey of publicans conducted by the Australian Hotels Association.**

The results of the survey showed that 1,000 employees had been dismissed in the metropolitan area, and 1,023 in the country, the president of the association's NSW branch, Mr Barry McInerney, said yesterday.

The survey showed quite clearly the effect of random breath testing on jobs in the hotel business immediately after the testing began in December, he said.

There had been a reduction in wages paid to metropolitan hotel employees equivalent to $176.40 a person during the two-week period.

In a full year the loss in wages would amount to $5.1 million in NSW, he said.

The AHA will convey its concern again to the NSW Minister for Transport, Mr Cox, and would also have meetings with the Urban Transit Authority, the NSW Taxi Council, private bus operators and liquor trades unions.

"Ninety-nine-point-nine per cent of hoteliers surveyed want the .05 blood alcohol limit raised to .08," Mr McInerney said. "One or two wanted it raised to .1 per cent."

Mr McInerney . . raise the limit

Figure 7.1. Newspaper articles on Australian Hotels Association

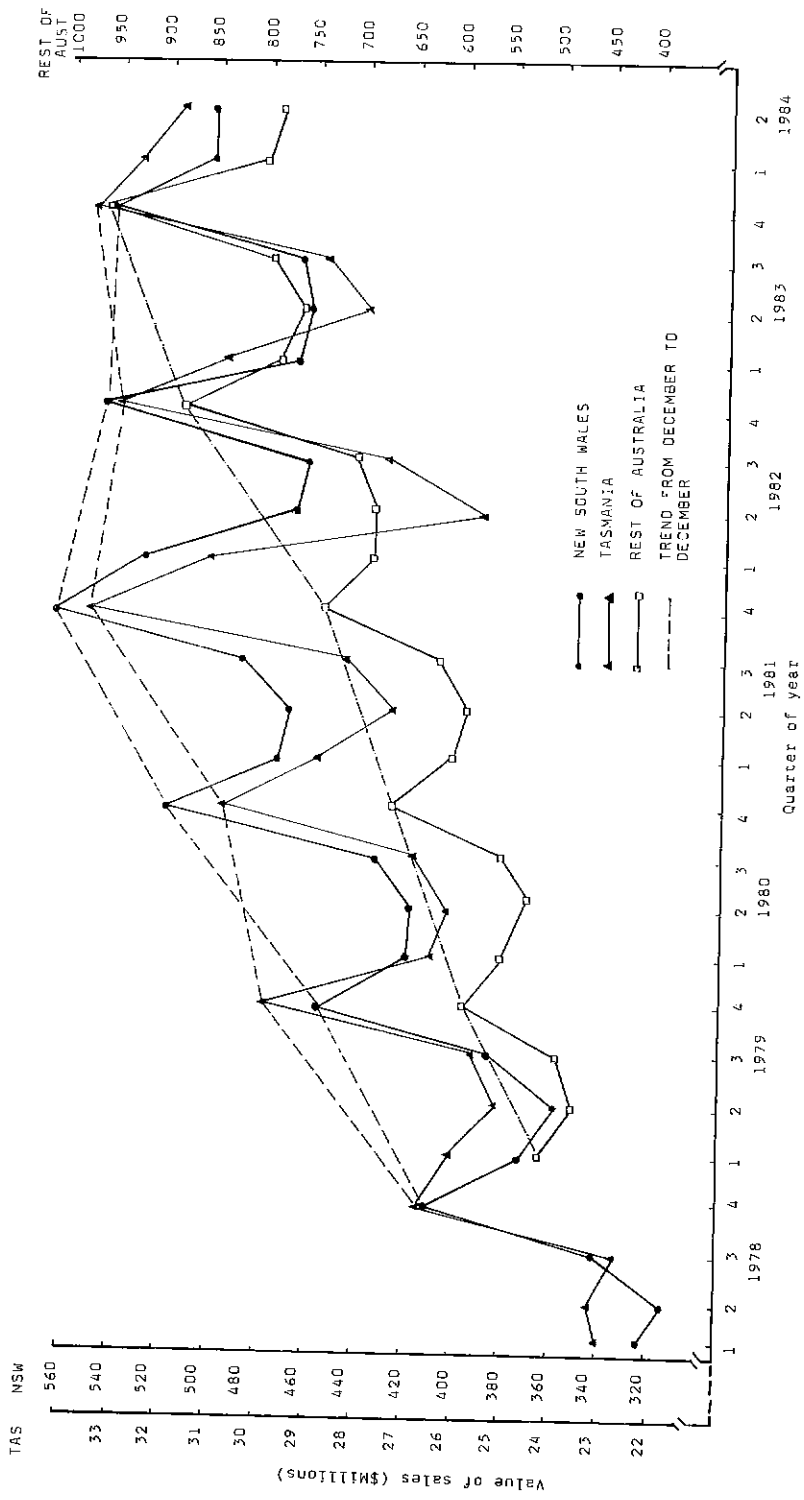



Figure 7.2 Value of sales of beer, wine and spirits ($million) by quarter of year for New South Wales, Tasmania and the rest of Australia

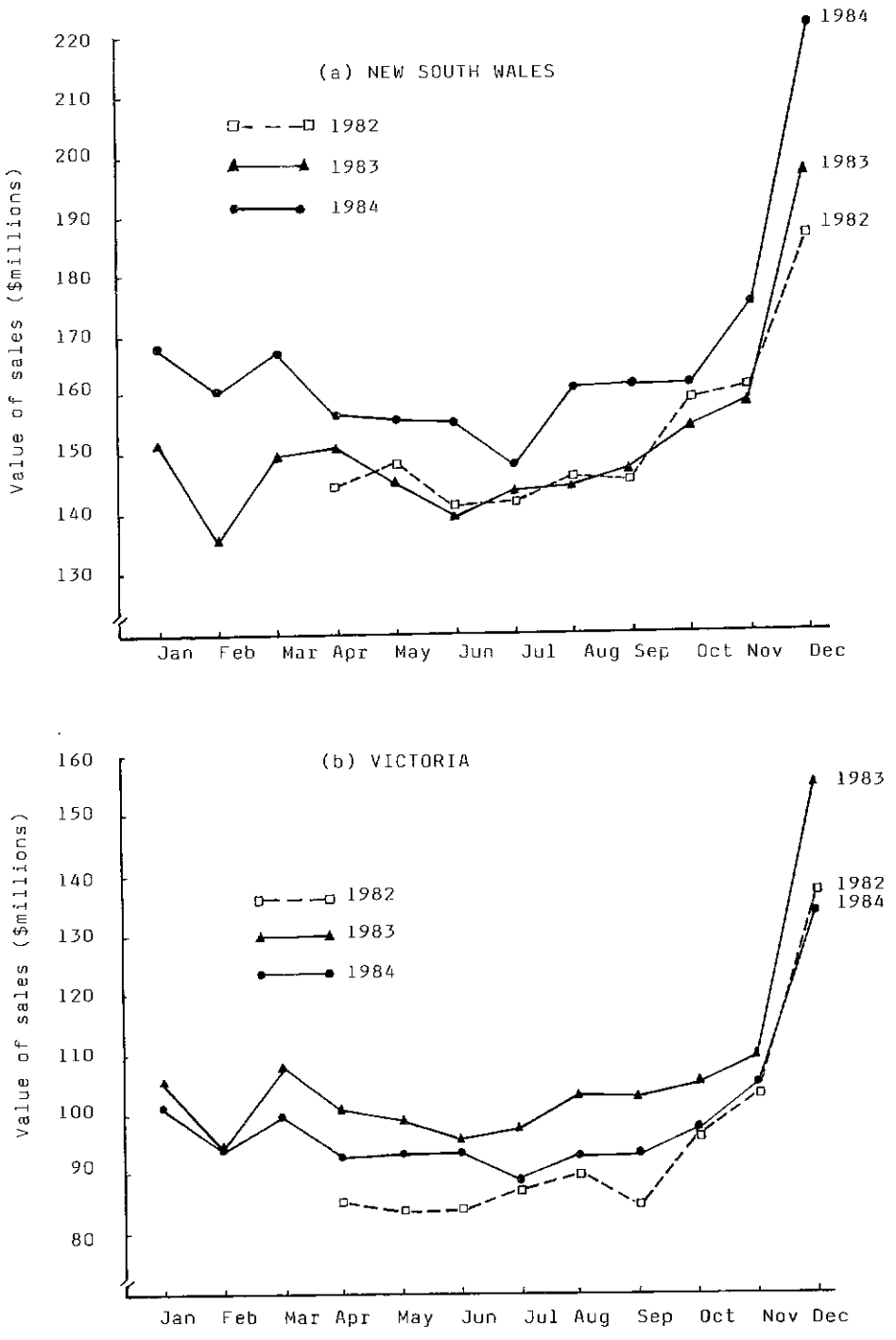
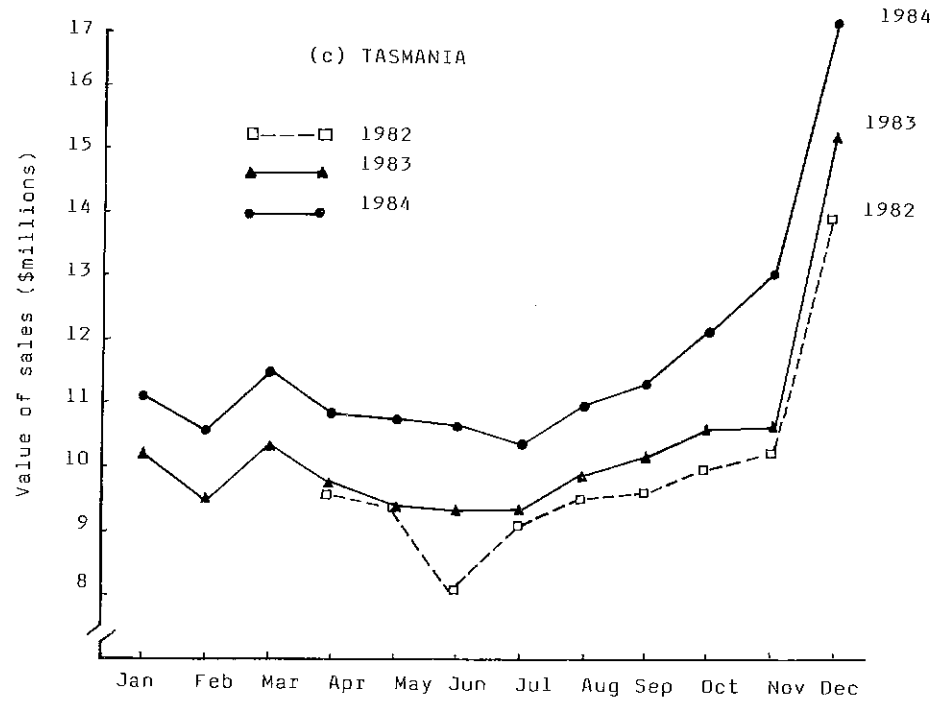



Figure 7.3 (a, b) Value of retail sales from hotels, liquor stores and clubs by month and year for New South Wales and Victoria



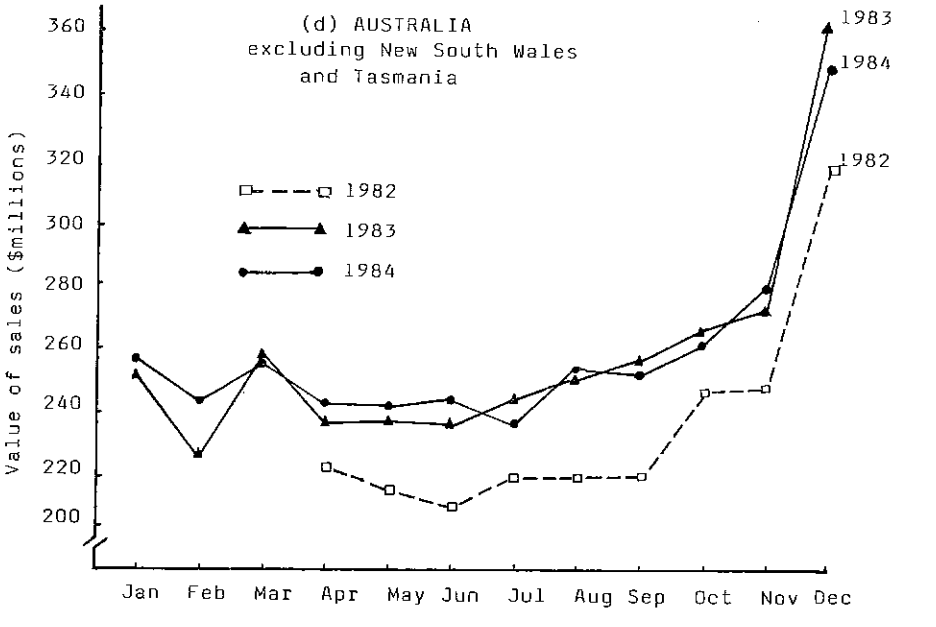




Figure 7.3 (c, d) Value of retail sales from hotels, liquor stores and clubs by month and year for Tasmania, and Australia excluding New South Wales and Tasmania

The other set of statistics from the Australian Bureau of Statistics indicates similar results. Figure 7.3 (a, b, c, d) shows the value of retail sales from hotels, liquor stores and clubs by month for New South Wales, Tasmania, the rest of Australia, and Victoria. Data prior to April 1982 were not available because a different classification system was used before that time. Again the pattern of sales is consistent over the years, with peaks in December and mid-year lows. In the rest of Australia, sales increased from 1982 to 1983 and 1984. In New South Wales and Tasmania, the two states which introduced random breath testing in late 1982-early 1983, sales in 1983 showed little or no increase over their 1982 level. The 1984 figures indicated some recovery which may be attributed to the lifting of the recession and/or some return to pre-random breath testing habits. The Victorian figures are difficult to explain, with 1984 sales below 1983 levels.

In summary, then, the two sets of data from the Australian Bureau of Statistics present a different pattern for the sales of alcohol in New South Wales (and Tasmania) from those in the other states, with indications of a decrease in sales in 1983 following the introduction of random breath testing. This picture is confirmed and extended by the Liquor Administration Board's figures for New South Wales alone.

*Sales of beer, wine, and spirits in New South Wales*

Table 7.1 shows the volume (in millions of litres) of liquor purchases by retailers in New South Wales from 1977 to 1983. Volume figures give a more accurate indication of the change in consumption because figures on the value of sales also include a component of increases due to inflation. As indicated earlier, the 1983 calendar year figures are estimates calculated for comparative purposes: the last assessment period was an extraordinary 18-month period covering all of 1983 and the first six months of 1984. Table 7.2 presents a clear picture of the change from year to year by showing the percentage increase or decrease from one year to the next for each of the three types of liquor.

Tables 7.1 and 7.2 support the picture provided by the Commonwealth Department of Health (1984) figures of a fall in beer purchases since 1978 and an increase in wine purchases. They also indicate a possible effect from random breath testing. From 1982 to 1983, the *only* increase in purchases was for wine in the metropolitan area. Apart from this single exception, the fall in purchases was more marked and more extensive than in any previous year. It covered all three types of liquor in both the metropolitan and country areas. The very sharp fall in spirits sales, in particular, is likely to be a result of random breath testing because spirits are probably easier to forgo than wine and beer; they have a high alcohol content and their consumption is less a part of the Australian lifestyle than beer and wine consumption. In terms of lifestyle, it is interesting to note the differences between the country and metropolitan areas in liquor consumption reflected by the figures in Tables 7.1 and 7.2. While these figures take no account of relative population size, more beer was purchased by country licensees than by licensees in the metropolitan area. On the other hand, metropolitan purchases of wine and spirits were double those in the country.

*Summary*

In summary, then, it appears that liquor sales in New South Wales were reduced by the introduction of random breath testing. The Australian Bureau of Statistics

**Table 7.1 Liquor purchases (million litres) in New South Wales by area, year and type of liquor**

| | No. of licences | Beer | Wine | Spirits | 'Total |
|---|---|---|---|---|---|
| | | *Metropolitan* | | | |
| 1977 | 2,815 | 365.98 | 55.54 | 14.11 | 435.64 |
| 1978 | 2,876 | 382.90 | 58.38 | 15.05 | 456.33 |
| 1979 | 3,107 | ..... Not available ..... | | | |
| 1980 | 3,203 | 381.86 | 74.61 | 13.77 | 470.25 |
| 1981 | 3,308 | 359.74 | 70.74 | 12.89 | 443.37 |
| 1982 | 3,346 | 317.93 | 77.41 | 15.30 | 410.65 |
| 1983 | 3,479 | 279.91 | 97.46 | 12.02 | 389.39 |
| | | *Country* | | | |
| 1977 | 3,609 | 346.90 | 27.64 | 7.49 | 382.03 |
| 1978 | 3,699 | 362.04 | 28.77 | 6.79 | 397.60 |
| 1979 | 4,070 | ..... Not available ..... | | | |
| 1980 | 4,295 | 425.69 | 36.37 | 6.96 | 469.02 |
| 1981 | 4,439 | 409.23 | 39.88 | 7.43 | 456.53 |
| 1982 | 4,557 | 378.27 | 45.03 | 7.66 | 430.97 |
| 1983 | 4,763 | 333.13 | 38.39 | 5.92 | 377.44 |

*Source:* Annual reports of Licenses Reduction Board (1982) and Liquor Administration Board (1983).

**Table 7.2 Percentage change in liquor purchases (million litres) by area and type of liquor**

| | Beer | Wine | Spirits | Total |
|---|---|---|---|---|
| | *Metropolitan* | | | |
| 1977-78 | +4.6 | +5.1 | +6.7 | +4.7 |
| 1978-80* | −0.3 | +27.8 | −8.5 | +3.1 |
| 1980-81 | −5.8 | −5.2 | −6.4 | −5.7 |
| 1981-82 | −11.6 | +9.4 | +18.7 | −7.4 |
| 1982-83 | −12.0 | +25.9 | −21.4 | −5.2 |
| | *Country* | | | |
| 1977-78 | +4.4 | +4.1 | −9.3 | +4.1 |
| 1978-80* | +17.6 | +26.4 | +2.5 | +18.0 |
| 1980-81 | −3.9 | +9.7 | +6.8 | −2.7 |
| 1981-82 | −7.6 | +12.9 | +3.1 | −5.6 |
| 1982-83 | −11.9 | −14.7 | −22.7 | −12.4 |

* No figures available from 1980 Annual Report of Licenses Reduction Board for 1979 calendar year.

figures indicate a fall in sales figures for New South Wales, coincident with the introduction of random breath testing and more marked than for the rest of Australia. While it is difficult to separate the effect of the recession from the effect of random breath testing, the comparative figures for the rest of Australia and the fact that the recession was beginning to lift by late 1983 (Australian Bureau of Statistics labour force figures) suggest that there was an effect from random breath testing in New South Wales over and above the effect of the recession.

It is especially difficult to estimate the effect on beer sales because, after a trend of increasing sales from the 1930s until 1978, beer sales have been falling throughout Australia. It is therefore difficult to separate the effects of random breath testing from what appears to be a nationwide change in drinking patterns, probably partly influenced by the differential tariffs on beer and on wine. On the other hand, survey results suggest that beer drinkers have changed their drinking or driving habits as much, if not more than any other group of drinkers (see Chapter 6). In South Australia, for example, 56.6% of male beer drinkers reported in October 1983, two years after the introduction of random breath testing, that they did not drink as much or that they drank more low-alcohol beverages since random breath testing began there (Australian Bureau of Statistics, 1984). The general consistency between overall survey results in South Australia and New South Wales means that these results are likely to be a good pointer to the situation in New South Wales. Of particular interest is the extent of the shift towards low-alcohol beers, but unfortunately, there are no pre-post random breath testing figures available. Low-alcohol beers do, however, seem to be gaining increasing acceptance, which is perhaps not surprising considering the level of advertising for low-alcohol beers, advertising that is aimed to increase the masculine image of low-alcohol products and ease the fears of arrest for drivers who drink.

## CHAPTER 8

# Conclusions

When random breath testing was introduced in New South Wales in December 1982, it came into effect with two important features — intensive enforcement and visibility of operation, and a high level of media coverage with a highly professional extensive advertising campaign. Both the level and enforcement and the level of publicity are, according to deterrence theory, important factors influencing the likely deterrent effect of anti-drink-drive legislation (Ross, 1982; Summers & Harris, 1979). The significance of both factors has also been supported by a number of studies evaluating campaigns against drink-driving in Australia (Saunders, 1977), Britain (Andenaes, 1971; Ross, 1982), Canada (Mercer, 1984 cited by Homel, 1985), and New Zealand (Hurst & Wright, 1980). The importance of both factors was accepted by the Staysafe Joint Parliamentary Committee on Road Safety which recommended that the introduction of random breath testing should be "accompanied by: (i) more conspicuousness of police; (ii) highly visible breath testing; (iii) media publicity; and (iv) education" (Staysafe 1, 1982, p.51).

*The level and style of enforcement*

The level of police operation of random breath testing in New South Wales has been and continues to be very high, considerably higher than elsewhere in Australia and possibly the world. In two years, police conducted 2.18 million initial breath tests compared with just over half a million in Victoria in over seven years (till the end of 1983). The number of hours of operation averaged over 230 hours per week in Sydney, resulting in an average of over 10,000 tests per week. This level of operation is much higher than even the "intensified periods of enforcement" in Melbourne, which at their height, between October and December 1978, reached 100 hours per week. The New South Wales style of operation was also much more intense than the operation in South Australia, where 159,000 tests were carried out in two years. In the first 18 months, only two units were operative but this number increased to four units in the metropolitan area of Adelaide and to 11 in the country from April 1983. On a per capita basis, only Tasmania (with less than 10% of New South Wales' population, and about 150,000 tests in 1983: Jiggins, 1985) appears to rival the New South Wales level of operation, but information on the evaluation in Tasmania is limited. International comparisons are more difficult because of differences in legislation and enforcement and because figures are less easily available. But the figures for two countries with comparable legislation for breath testing (France and Sweden) show much lower levels of testing. In France, for example, with a population of about 54 million, 335,000 tests were carried out in 18 months, and in Sweden, with 8.3 million people (compared with 5.3 million in New South Wales), there were just over one million tests in 35 months.

Not only was enforcement in New South Wales intense, it was also highly visible as elsewhere in Australia. Random breath testing operations were intended to be conspicuous for two reasons: first, to advertise their function and create maximum

public exposure; second, to increase the safety of both the police testing on the roadside and of the motorists pulling out of and re-entering the traffic flow. The visibility of units was and is increased by the use of buses or vans, and at night by the use of traffic cones, reflective torches and flashing blue lights. The function of the unit is advertised by signs. The selection of hours of operation, with a considerable proportion between 6 p.m. and 10 p.m., is also intended to maximise public exposure and deter potential offenders from drink-driving.

The primary deterrent function of random breath testing, however, needs to be balanced with and reinforced by a real perceived risk of detection. The high visibility of random breath testing stations, necessary for their deterrent role, makes them easier to avoid and so less effective as a means of detecting offenders. For this reason, Cashmore & Vignes (1984) recommended an increase in late-night/early-morning operations. The hours between 10 p.m. and 6 a.m. are well-known as high-risk hours for both drink-driving and alcohol-involved crashes (Ross, 1982) and the group discussions (Elliott & Shanahan, 1983) indicated that one strategy being used to avoid random breath testing was to stay out late beyond the end of the police night-shift. Although testing in the early hours of the evening is still important to deter potential drink-drivers, this deterrent effect is minimised if a motorist who is about to drink believes that there will be few, if any, units operating on the way home later that night. As the results in Chapter 3 indicate, the number of late-operations increased substantially in mid-1984. Police proposals for changes to the location and style of operation, also related to the issue of avoidance, will be discussed later.

In summary, police operation of random breath testing has continued at a very high level in New South Wales, especially in comparison with the levels of enforcement in the other states which have comparable legislation.

*Media publicity*

The other important input in the random breath testing campaign, media publicity, has also been extensive. The Government-funded advertising campaign, beginning in December 1982 and continuing in its different phases and with bursts over the Christmas and Easter holiday periods, has cost about $2.7 million (until mid-1985). This expenditure, however, has to be set in context against the estimated expenditure by the liquor industry in promoting sales of alcohol — about $15.5 million in 1983 in the Sydney metropolitan region alone (Bruce Tart Research Services). One significant change by the liquor industry in response to random breath testing has been the promotion of low-alcohol beverages, especially beers. The advertisements for low-alcohol beers have sought to increase their acceptability to men for whom low-alcohol drinks previously had a soft, un-masculine image.

The original random breath testing television advertisement emphasised fear of arrest, and like the advertisement used in the second and more successful blitz in 1978 in New Zealand (Hurst & Wright, 1980), presented a threatening image. The slogan used in this original advertisement was revised and repeated in later phases in an attempt to evoke the earlier impact. Recall for this advertisement was found by surveys and by the group discussion study to be very good.

News coverage of the issue of random breath testing by the media reinforced the advertising campaign by providing substantial additional publicity. News about forthcoming blitzes was a common topic for news-stories, as were evaluations concerning the effects of random breath testing. Most of the evaluative comment in the press was positive or neutral, especially in the early months when the positive effects on the road toll were being widely acclaimed.

In terms of media publicity, then, as well as the level of enforcement, the New South Wales experience of random breath testing has been more intense than in other states. Media publicity in South Australia was "low key", with "no specific program of publicity" (Bungey & Sutton, 1983) and even concerted opposition to random breath testing from one of the two major daily newspapers. Although press treatment has generally been favourable in Victoria in contrast to the South Australian situation, publicity in Victoria has not been as continuous as in New South Wales nor as intense when it has accompanied police blitzes against drink-driving (Cameron & Sanderson, 1982).

Results of the evaluation of the October 1983 blitz which was supported by extensive mass media publicity (South, Swann & Vulcan, 1984) are not yet available.

*Awareness of and exposure to random breath testing*

Public awareness and exposure to random breath testing is a direct and intended outcome of the intense, highly visible enforcement operations and of the extensive publicity. It is also an important pre-condition for the effectiveness of the campaign. Public exposure is a significant factor in both the deterrent effect and in the longer-term educative effect of the legislation. The mediating role of public awareness and exposure is depicted in Figure 8.1 which presents a simplified deterrence model (adapted from Homel 1985 and Snortum 1984) and at the same time provides a summary of the input and outcome variables used in the evaluation of random breath testing in this report; the model also outlines the relationships between these variables. As Figure 8.1 shows, community exposure to random breath testing is both an outcome of the enforcement and publicity campaigns and a factor affecting perceptions of the likelihood of "being caught" when drink-driving. Homel's (1985) findings provide supportive evidence of the predictive relationship between exposure and the perceived likelihood of arrest.

Given the important role of community awareness and exposure, what conclusions can be drawn from evidence concerning both the level and type of exposure to random breath testing in New South Wales? The results of several surveys conducted within the first few months after the introduction of random breath testing revealed wide awareness of publicity about random breath testing (Elliott & Shanahan, 1983; Homel, 1983a; Job, 1983) and high levels of exposure to police operations, either directly, by being tested or driving past random breath testing stations, or indirectly, by knowing others who have been tested (Cashmore, 1983; Homel, 1983a, 1983b). The results of these surveys were consistent with each other and consistent with the police figures on the numbers of tests conducted, and indicated a higher rate of exposure in New South Wales in a few months than in other states (e.g., Victoria and South Australia) after several years. Again, this result is consistent with the relative levels of enforcement in these states. In 1984, after an additional twelve months of operation, the exposure rate was predictably even higher.

In summary, then, there is strong evidence for a relatively high level of community awareness and exposure to random breath testing. In attempting to put together the various pieces of evidence to build a picture of the effects of random breath testing, community exposure is important because it increases the likelihood that any effects are caused by the introduction of random breath testing rather than just coincident with it. If the community remained largely unaware of the operation of random breath testing, the case for an impact from random breath testing would be somewhat shaky.

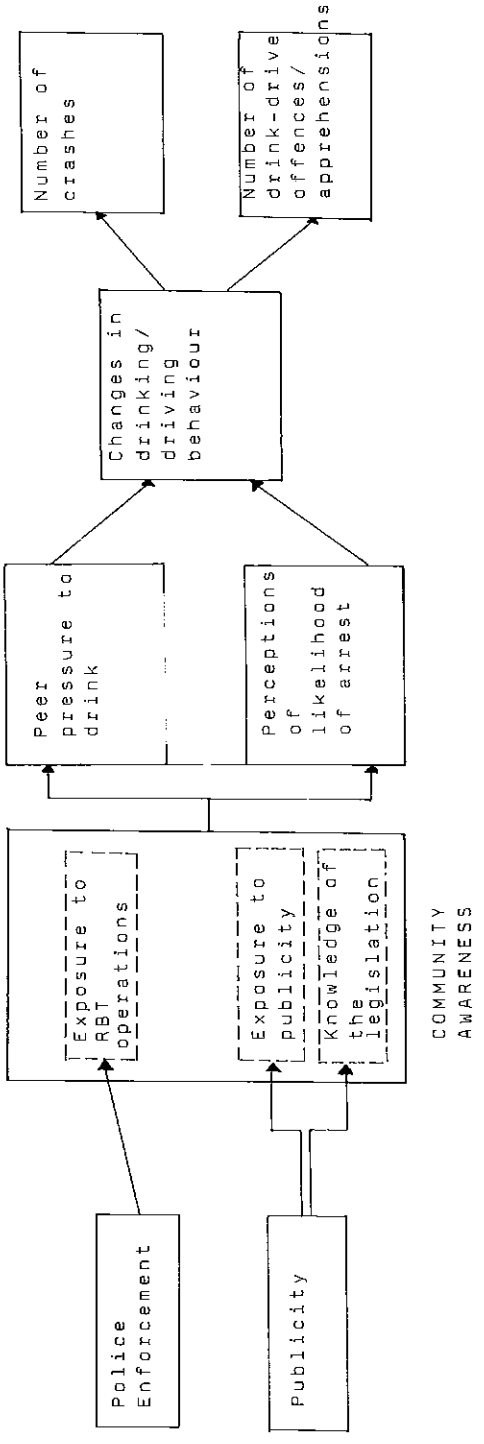



Figure 8.1 Summary model of variables in evaluation of random breath testing

*Effects of random breath testing*

What evidence is there, then, for the impact and, more specifically, for the effectiveness of random breath testing? Like Snortum (1984), we have used a variety of outcome measures (shown in Figure 8.1 and in the headings of the last six chapters), ranging from crash statistics to reported changes in drink-drive habits and attitudes. Although the individual measures each have their limitations and interpretive problems, together these measures bolster each other and support a reliable overall picture of impact.

*Changes in reported attitudes and drink-drive behaviour*

In terms of the proposed order of effects shown in Figure 8.1, changes in both the perceived likelihood of arrest and in reported drink-drive behaviour could be expected to precede and result in changes in the number of alcohol-involved crashes and drink-drive offences.

A central factor in the deterrence model proposed by Homel (1985), the perceived likelihood of "being caught" when drink-driving, should have increased with the introduction of random breath testing. Job's (1983) findings indicate that this did occur, although Homel (1984) found some "wearing off" of the effect in his repeat survey several months later. More importantly, however, Homel (1985) found that the perceived risk of arrest was a significant factor in predicting whether people changed their drinking behaviours and travel arrangements in a bid to avoid drink-driving; there was little evidence of "wearing off" in the number of reported behaviour changes as a result of random breath testing. Similarly, reported behaviour changes were stable and in fact the number of people reporting changes increased slightly from 1983 to 1984 (Cashmore & Vignes, 1984).

Although there may be some doubt about whether *reported* behaviour changes accurately reflect *actual* behaviour changes, there is some evidence to substantiate claims about changed behaviour. First, there is the striking consistency across surveys, both over time and from state to state, in the number of people reporting changes and in the relative frequency of the various types of changed behaviour. By itself, this may simply reflect the reliability of socially desirable responses, or of self-deceptive responses. But, secondly, there are more direct measures which provide some validation. For example, the most commonly reported change was to limit the number of drinks or the alcohol content of drinks when driving. The cumulative effect of this change is supported by evidence of a fall in alcohol sales in New South Wales which appears to have been related to the introduction of random breath testing (Chapter 7). There has also been an increase in the consumption of low-alcohol beers with the liquor industry responding to the threat of random breath testing by promoting low-alcohol beverages, especially beers. Draught sales of beer have continued to fall although this trend was evident before the introduction of random breath testing; it may also be related to the reported change of increased drinking at home rather than in hotels or clubs.

Roadside surveys in Adelaide (McLean et al., 1980, 1984) also provided substantiation of independent interview surveys regarding the greater deterrent effect of random breath testing on men than women and also of the increased likelihood of women driving their partner home after the introduction of random breath testing (Australian Bureau of Statistics, 1984). Unfortunately, no roadside surveys have been conducted in the New South Wales evaluation of random breath testing; it is unfortunate because such surveys provide the most direct and reliable measure of the incidence of drink-driving behaviour. It should be noted that

McLean et al. (1984) also reported some *inconsistencies* among responses to questions on their "mail-in" questionnaire but, as they also report, these difficulties are likely to have been a result of the self-selected and unrepresentative nature of the sample and of the subject of the questions, self-reporting of alcohol consumption.

Another apparent change in attitude and behaviour is the decreased peer pressure to drink, and to drink and drive, a change that is substantiated by congruent evidence across several sources. Homel (1985) and Elliott & Shanahan (1983) both reported evidence indicating that random breath testing provided an acceptable excuse for not drinking, not drinking as much, drinking low-alcohol drinks, and not driving after drinking. Another significant change indicating reduced peer pressure to drink and drive was the reported change in men's behaviour of getting someone else to drive, and the congruent finding in Adelaide's roadside surveys of an increase in the number of female drivers with male passengers, especially at night. These changes together are especially significant because the expectation that men should prove their competence as drinkers by driving after drinking is a powerful force acting in opposition to legal sanctions against drink-driving.

There is, then, a body of evidence indicating that some people have changed their drinking and/or driving behaviour as a result of random breath testing. Such changes, however, have not been universal and although the groups most needing to change have been more likely to report changes, these groups have also been most likely to admit drinking and then driving since the introduction of random breath testing.

*Changes in the number of apprehended drink-drive offenders*

Evidence that a number of people have not changed their drink-drive habits to avoid drink-driving is amply and predictably provided by the number who have appeared in court on drink-drive charges. On the other hand, the number charged with and convicted for drink-drive offences fell sharply in 1983 following the introduction of random breath testing. The 30% drop from 1982 to 1983 is a very significant reduction which cannot be simply accounted for by the shift in police resources from "high-catch" non-random methods to "low-catch" random breath testing. In fact, in the absence of any change in the incidence of drink-driving, an increase in the number of charges would have been expected with the introduction of two new methods for detecting drink-drivers — random breath testing and the compulsory blood testing of road accident victims. Compulsory blood sampling, in particular, should be "picking up" offenders who previously avoided detection because of their injuries. It seems then that the best explanation for the drop in the number of drink-drive convictions is a real reduction in the incidence of drink-driving in the community. Once again, roadside surveys could have provided more direct and convincing evidence without the contaminating influence of changes in the level of police resources.

Another positive change following the introduction of random breath testing was the further reduction in the average BAC of drink-drive offenders. This fall continued the trend away from the more serious, high BAC offence, but the fall was more marked than in previous years indicating a real change rather than a simple continuation of a trend. This change may reflect the influx into the ranks of drink-drive offenders of a group apprehended by random breath testing and more representative of the population in general than the "non-randomly" detected

offender. A comparison of the two groups of offenders in South Australia (Bungey & Sutton, 1983) found that those apprehended by random breath testing tended to be older, have lower BACs, and to be more likely to include women and less likely to include people with previous convictions than those apprehended by "normal" police patrols. On the other hand, the general downward trend in average BACs might be optimistically interpreted as the result of the long-term educative effect on the community of drink-driving countermeasures. Although both factors may play a role, the influence of randomly-detected offenders on the profile of drink-drive offenders is the more likely explanation.

*Changes in the number of road-crash fatalities and casualties*

In the final analysis, the most important criterion for evaluating the impact of random breath testing is the change in the number of people killed and injured in road crashes. The main aim of this and other drink-drive legislation is, after all, the reduction of the road toll. The change in the road toll was certainly the major measure used by the press to weigh the success or otherwise of random breath testing.

In 1983, the first year after the introduction of random breath testing in New South Wales, there was a marked reduction in the number of people killed and injured in road crashes compared with the average figure for the preceding six years. The reduction in the number killed was much greater than for any preceding year-to-year comparison, and was also greater than for any other state for this period — except Tasmania, which also introduced random breath testing at about the same time. A comparison of the 1984 figures with the pre-random breath testing six-year average showed a continuation of the reduction for both New South Wales and Tasmania although in both cases the 1984 figures were up on the 1983 figures.

The evidence for an effect from random breath testing on the road toll is therefore quite convincing, although there is some uncertainty about the extent to which the attributed effect should be discounted for the influence of other factors, especially economic factors. Random breath testing was introduced at a time of depressed economic activity with subsequent economic recovery in 1984, the second year of random breath testing. However, the decrease in the proportion of alcohol-involved fatalities, a decrease which continued and strengthened in 1984, adds weight to the case for the influence of random breath testing. It is also likely that a breakdown of crashes by time of day will show a greater reduction in night-time than day-time crashes, again indicating an effect from random breath testing. The crash data by time of day and also the statistical analysis of these figures is beyond the scope of this report, but may be expected as part of the Traffic Accident Research Unit's evaluation of random breath testing.

When compared with the results in other states after the implementation of random breath testing, the New South Wales results are stronger and more long-lasting. In Victoria, the several periods of intensified random breath testing resulted in significant reductions in night-time fatality and serious casualty accidents during the weeks of the campaign and for the two weeks following (Cameron & Strang, 1982). In South Australia, there was a significant reduction in late-night casualty accidents in the metropolitan area but the effect was short-lived, lasting for only a few months. The strength and duration of the effect does seem then to be related to the intensity and continuity of enforcement and publicity, with greater and more long-lasting effects in New South Wales than elsewhere.

*Summary*

The overall picture of the effect of random breath testing is composed of a number of pieces of mutually consistent, interlocking evidence. The main features may be summarised as follows:

- A continuously high level of enforcement together with an extensive and powerful advertising campaign and consistent news coverage;
- A high level of community awareness of the advertising campaign and exposure to the operation of random breath testing;
- Increased community agreement with random breath testing;
- An increased perceived risk of apprehension for drink-driving offences;
- Consistently reported changes in drinking and driving behaviour to avoid drink-driving, especially increased efforts to limit the number of drinks when driving;
- Evidence in some of the reported changes in behaviour pointing to a reduction in peer pressure to drink and then drive;
- A fall in liquor sales, especially beer, and, increased advertising of low-alcohol beers;
- A marked drop in the number of drink-drive offences, especially in the number of high PCA charges and convictions; this fall cannot be accounted for by the shift in resources to a "low-catch" method in random breath testing;
- Perhaps, most importantly, a strong and sudden reduction in the number of people killed and injured in road crashes, and a fall in the proportion of fatally injured drivers with illegal BACs.

Taken together, these various sources of evidence paint a convincing picture of the impact of random breath testing in New South Wales. Several qualifications need to be added to this somewhat rosy picture, however. First, the effects are not universal nor evenly distributed across the state and throughout the population. There were regional differences, and differences associated with sex, age and drinking habits. Second, the effects have not been even over time; they were predictably most dramatic in the early months. Third, the benefits, both financial and social, have to be balanced against any possible costs. These three qualifying notes are the subject of the following sections.

*Sex-related differences in the effects of random breath testing*

One of the most consistent findings in the drink-drive literature is the difference between men and women in their drinking habits, driving habits and in their response to drink-drive countermeasures. Drinking is more common among men than women. So also is the pressure to be a "competent drinker", a capacity which is believed to be demonstrated by the ability to drive after drinking. Not surprisingly then, men were less in favour of random breath testing, and of the .05 limit than women, but they were also more likely to have been exposed to random breath testing and to report changing their behaviour following the introduction of random breath testing (Australian Bureau of Statistics, 1984; Cashmore, 1983; Cashmore & Vignes, 1984; Homel, 1983a). On the other hand, men also had more need to change their behaviour, and although apparently more deterred from drink-driving than women, more men than women admitted to drink-drive episodes after random breath testing was introduced. Both before and after random breath testing, men have predominated in statistics on charges and convictions for

drink-drive offences, although evidence from roadside surveys conducted elsewhere indicates that women are under-represented in these statistics.

Since most heavy drinkers are men, the findings with respect to the type of drinker (both in terms of amount and type of beverage consumed) are very similar to the male-female results. In particular, heavy drinkers were more likely than light to moderate drinkers to report having changed their behaviour, but again, they had more need to do so and a proportion still admitted to drink-driving after the introduction of random breath testing. Since the most common change, especially for heavy drinkers, was to limit the number of drinks, it is tempting to interpret the marked drop in average BACs and especially in the number of high BACs (.15 and over) for apprehended offenders as a result of drinkers reducing their alcohol consumption. Even if offenders' resultant BACs are still illegal, this is a positive change because both the risk and the severity of accidents increase as BACs increase. The greater reduction in the number of fatalities than in the number of casualties adds weight to this interpretation, indicating a shift down the scale of severity. On the other hand, the fall in average BACs may be the result of the addition to detected offenders of a group detected by random breath testing with lower BACs (Bungey & Sutton, 1983). Unfortunately, the available data do not allow us to distinguish between these two explanations but it is likely that both factors may contribute to the fall in average BACs.

The issue of who has been most deterred by random breath testing becomes even more complex if we take into account McLean et al.'s (1984) conclusion from the roadside surveys in Adelaide that light drinkers (with legal BACs) were deterred more than moderate and heavy drinkers (with higher BACs). This conclusion was based on the finding that the proportion of drivers with positive BACs (greater than zero) showed a greater reduction after the introduction of random breath testing than the proportions in the higher BAC groups (.05 and .08). However, these data did not test the possibility that a fall in the proportion of drivers with high and very high BACs may have contributed to a fall in the average BAC of those with illegal BACs (.08). It is therefore difficult to determine conclusively which groups of drinkers have been most deterred by random breath testing.

*Regional differences in the effects of random breath testing*

Variation across areas in both the input aspect of enforcement and in the various outcome measures (for example, charge rates, crash statistics and survey results) should provide a good opportunity to test the effects of random breath testing. Unfortunately, this is easier said than done because of the differences in the regional categories used across the various sources of data. However, some conclusions can be drawn using the simple breakdown of areas (Sydney, Newcastle, Wollongong, and the country) applied to the police data and crash data, and a city versus country breakdown for the survey data. A thorough analysis of regional variations would take account of the wide range across country towns but is beyond the scope of this report.

Wollongong was distinctive in a number of ways. First, it had a higher level of testing on a population basis than the other three areas (Sydney, Newcastle and the country). But it also had the lowest proportion of tests in the high-risk hours between 10 p.m. and 6 a.m., which may, in turn, have contributed to its exceptionally low charge rates (from random breath testing) in both 1983 and 1984 (Chapter 3). Wollongong (or the Illawarra district) also showed by far the biggest reduction in 1983 in the number of fatalities, but the smallest reduction in 1984;

the number of casualties showed a similar but less marked trend. Wollongong also had two other distinctive features. First, it was hit especially hard by the recession and had a particularly high rate of unemployment; second, the population of Wollongong had been subject to a special public education campaign against drink-driving in late 1982 just prior to the introduction of random breath testing. It is therefore difficult to draw any firm conclusions because it is difficult to know whether the lessened effect on fatalities and casualties was an indication of a "wearing off" effect of the two campaigns, an expected return from a particularly strong initial change, or the result of an upswing in the economy resulting in more driving and more alcohol consumption. The Wollongong results are particularly striking in their contrast with the Newcastle results because both are industrial cities with a number of similarities in the composition of their populations.

The city versus country comparison also yielded a number of differences, especially in the survey data, which suggest less effect from random breath testing in the country than in the city. Although the perceived risk of being tested was higher in the country (Homel, 1983c), this effect was probably negated by the lesser certainty among country residents that being tested and being found to be "over the limit" would lead to arrest; in small towns, the local police officer is likely to be well-known and seemingly is believed to be more receptive to pleas for a second chance from "his mates". The changes in drink-drive behaviour reported by country residents also indicate that they may be more reluctant than those living in the city to limit their drinking. Country residents were less likely to limit the number of drinks when driving and more likely to drink and get someone else to drive. Probably as a result of these differences and the lack of alternative means of transport, the charge rates from random breath testing were considerably higher in the country than in the city, especially Sydney and Wollongong.

*Change in the effects of random breath testing over time*

On the basis of the results of most overseas drink-drive campaigns and the Victorian experience with random breath testing, the impact of random breath testing in New South Wales could have been expected and was predicted by some to be quite short-lived. Some "fall-off" should have been expected as the "shock effect" of the new legislation and the associated publicity wore off (Andenaes, 1971) and people revised their initial overestimates of the risk of being "caught" (Ross, 1982). But unlike many of the blitz campaigns overseas and in Victoria, enforcement in New South Wales continued at a high level supported by extensive publicity around Easter and Christmas and by other periods of publicity in between.

What evidence is there of diminishing effects over time in the New South Wales implementation of random breath testing? If there are signs of the effects wearing off, they should be evident in the primary measure of effectiveness — the extent of the reduction in the road toll. Simple comparisons of 1983 and 1984 crash statistics on first glance support simplistic interpretations of a declining deterrent effect, with the 1984 figures showing a 7.1% increase over the 1983 figures in the number of people killed and a 4.3% increase in the number injured in road accidents. At the same time, however, there was a further fall in the proportion of fatally-injured drivers with illegal BACs, suggesting that factors other than alcohol were involved in the increase in crash statistics. The most likely and obvious factors are economic, since all states of Australia showed a decrease in 1983 in the numbers of people killed, followed by an increase in 1984 in all states (except South Australia) with the upturn in the economy in 1984. This relatively simple account, however, needs to be qualified on two counts. First, although there was an increase

in the road toll from 1983 to 1984, the 1984 figures still represent a considerable reduction on the figures predicted by the six-year pre-random breath testing average. Second, some fluctuation in the figures is expected as part of the normal range of variation, especially after the very good result in 1983. Interpretation of the change in the crash statistics is therefore not as simple as it first appears, nor as simple as portrayed in some newspaper articles. (Further analysis of these figures is the subject of the Traffic Accident Research Unit's report.)

Neither do police data on the number of people charged as a result of random breath testing operations allow for simple conclusions about the longevity of the impact. A simple and optimistic interpretation of the lower charge rates for all four areas in 1984 than in 1983 might suggest that fewer people were drink-driving, so indicating a continued and greater impact in the second year of operation. On the other hand, it is very likely that at least some of the reduction in charge rates is the result of more successful avoidance behaviour by drinking motorists who have learned where random breath testing stations are likely to operate. Some indication of whether the lower charge rates meant a decrease in the incidence of drink-driving could have been provided by roadside survey results, like those conducted in South Australia. But in the absence of these results, increased avoidance behaviour may be indicated by an increase in late-night casualty accidents in back-streets, found in Adelaide (McLean et al., 1984) but not yet documented in New South Wales. The results of the group discussion study (Elliott & Shanahan, 1983) and of several surveys (Homel, personal communication, 1985; Job, 1983) and anecdotal evidence certainly suggest that people do use back-streets to avoid possible random breath testing sites.

The avoidance issue has been raised recently in questions relating to the location and style of random breath testing operations. Police have been pressing for licence to operate mobile random breath testing patrols as well as stationary roadside units (*The Sydney Morning Herald,* 10 April 1985, p.14) and for less restrictions on testing in the vicinity of hotels and clubs (*The Sun Herald,* 10 March 1985, p.2). The police claim that the use of mobile units in minor roads is necessary to deter motorists using back-streets to avoid random breath testing. If, as in Adelaide, there has been an increase in the proportion of late-night casualty accidents occurring in back-streets, the police claim would appear to be well-founded. Similarly, testing nearer to hotels and clubs might be justified on the grounds that this allows better targeting of potential offenders and more effective use of police resources. Both issues, however, again raise questions about civil liberties and the justifiability of increasing police powers as the deterrent effect of "old powers" wears off. Both are ultimately political decisions and depend to some extent on community acceptance of such changes.

*Cost-benefit analysis*

The final issue concerns the overall cost-benefit analysis — that is, whether in monetary terms, the benefits have outweighed the costs of its implementation. This analysis will involve some rough estimates and we do not claim that it is comprehensive or definitive. Neither does cost-benefit analysis in dollar terms take account of the trauma, both physical and emotional, resulting from road accidents.

The costs attached to random breath testing fall into four main categories:

(1) The cost of enforcement, entailing salaries for personnel and expenditure on equipment;

(2) The cost of the publicity campaign;

(3) The costs, to the liquor industry and government, associated with reduced liquor sales, increased unemployment and foregone tax revenue on liquor sales;

(4) The net loss in revenue from fines.

(1) *Salary and equipment costs.* Since the introduction of random breath testing in mid-December 1982, nearly 134,000 police hours were devoted to random breath testing operations till the end of 1984. Using a conservative estimate of $12.50 per hour per officer (RACV, 1984), this amounts to a total cost in salaries of $1.68 million. Equipment bought for random breath testing operations has included 22 specially fitted-out mini-buses, Alcometers, and mouthpieces, Alcotest tubes, torches, signalling wands and special reflective signs, at an estimated cost of $1.3 million (Police Submission to the Staysafe Committee, 1985). The estimated total cost of the enforcement of random breath testing in 1983 and 1984 is about $2.98 million.

(2) *Advertising campaign.* An estimated $2.72 million was spent by the government on the various phases of the advertising campaign from early December 1982 to December 1984, when the beginning of another $1 million campaign was announced. This figure does not include the "free" community service announcements or the cost of the NRMA's "Don't blow it campaign" (nor the free publicity provided by news coverage of the issue).

(3) *Costs associated with reduced liquor sales.* Estimating the cost to the liquor industry and the government (in taxes) is very difficult and any estimates will be very rough indeed. Assuming generously that 5% of the 8.9% decrease in the volume of liquor purchases was attributable to random breath testing and the remaining 3.9% to the recession or changes in consumer preferences, this would have resulted in a decrease in liquor sales of some 32.7 million litres (on Liquor Administration Board figures), so resulting in a fall in turnover of about $52 million. This in turn would have meant a loss of about $5 million in liquor licence fees to the government. The Australian Hotels Association also claimed that random breath testing caused a loss of jobs in the industry but these claims were based on poor data and may have been the result of the recession rather than of random breath testing.

(4) *Net loss in fine revenue.* Although random breath testing was not a revenue-raising operation, the fines resulting from drink-drive charges can be regarded as a means of recouping some of the expenditure involved in the apprehension of offenders. However, in 1983, and it seems likely in 1984 also, the number of proven drink-drive offences fell by about 30%, despite the 5,348 charges resulting from random breath testing operations in 1983 and 5,096 charges in 1984. The net loss of revenue associated with the deterrent effect of random breath testing is estimated at $2.38 million (see Appendix XVI).

On the *benefits* side of the equation are two sets of savings. One major category includes the savings associated with the reduction in the road toll. The other includes the savings in court costs associated with the drop in the number of drink-drive charges. This set of savings will be dealt with first.

In 1983, 16,205 people appeared in court to face PCA charges, nearly 7,000 less than in 1982. Since most people charged with a PCA offence plead guilty, their cases are usually dealt with in 15 to 20 minutes. Assuming that three PCA cases are heard per hour, approximately 2,320 hours of court time were saved as a result of

the fall in the number of PCA charges in 1983. At a conservatively estimated cost of $105 per hour of court time (based on the combined salary costs for the magistrate, monitor, police prosecutor, duty solicitor (involved in about one third of cases), court orderly, and clerks involved in processing the papers), this represents a saving to the state of about $244,000 (6,964 cases x $35 per case). These calculations are based on 1983 alone, but there are indications that the decreased number of charges continued into 1984. While we cannot assume that all of this drop in the number of charges is attributable to random breath testing, the 1983 estimated savings could be seen as a fair estimate of the total court-related savings resulting from random breath testing for both 1983 and 1984.

The calculation of the savings associated with the reduction in the road toll is based on a study by Atkins (1981) the figures for which were later updated by the Office of Road Safety.

Atkins (1981) presented an analysis of the social and economic costs of road accident fatalities, and injuries of several levels of severity. These costs included five main categories: (1) foregone income; (2) losses to the family and community to cover work and services performed outside the normal working week; (3) hospital, medical and rehabilitation costs; (4) vehicle damage; (5) legal and court costs, insurance costs, and the cost of accident investigation. In 1978, for example, the estimated average cost of each fatality was $157,085; the estimated cost for each person with major injuries was $27,670, and $3,190 for minor injuries. These estimates have been revised by the Office of Road Safety to bring them into line with 1983 and 1985 costs. The 1983 estimates were $265,000 for a fatality, $47,000 for a major injury and $5,000 for a minor injury. On these figures, the reduction in the number of fatalities in 1983 from the predicted six-year pre-random breath testing average represented a saving of $88.78 million (335 x $265,000). Similarly, the reduction in the number of casualties (assuming 5% were major) constituted a saving of $31.8 million, giving an overall saving in 1983 of nearly $120 million. The 1984 savings resulting from the reduced number of fatalities and casualties was $98.3 million (see Appendix XVII). In the two years, 1983 and 1984, the total estimated benefits from the reduction in the road toll was $218.3 million. These figures do not include any benefit from the decreased number of property-damage non-injury crashes.

So far, the calculations have considered the benefits derived from the decreased number of fatalities and casualties from the predicted figure, without taking into account the factors contributing to the decreased road toll. Whereas the components on the cost side of the equation are generally able to be directly attributable to random breath testing, the same does not apply to the benefits side. As we have already argued, economic and social factors in addition to the effects of random breath testing may have had an impact on the road toll. But even if we use a generous discounting factor of 50% to take account of other influences, the estimated saving (of $109.1 million) is still nearly double the estimated cost (of $62.7 million). And as we have already pointed out, these calculations only consider the monetary costs and benefits. Quite clearly, in monetary terms alone, random breath testing can be considered to be more than worth its costs. This finding is consistent with the very positive assessment of the cost-effectiveness of intensified random breath testing in Victoria (Cameron & Strang, 1982). However, as Cameron et al., (1981) and the RACV (1984) point out, a level of enforcement of at least 800 police hours a week (for cities the size of Melbourne or Sydney) may be necessary to be effective; this is the average level of enforcement achieved in Sydney for at least the first 18 months of random breath testing.

*Summary*

In conclusion, there is a body of evidence comprising a variety of data sources, which together indicate that random breath testing has had a significant impact in New South Wales. The various features of this impact were summarised earlier. One of the less certain aspects of these results, however, is the extent to which the effect of random breath testing can be disentangled from the influence of other factors such as the economic forces operating at the time random breath testing was introduced.

The success of the New South Wales program is certainly not unique, but there is good reason to believe that the combined longevity and extent of the impact has been greater than that reported in previous studies. Ross (1982), for example, concluded his review of numerous drink-driving countermeasures by stating that "even the most successful of deterrent interventions appear in the course of a few years to have lost their entire beneficial effects" (pp.109). After more than two years of random breath testing in New South Wales, however, the beneficial effects on the road toll are still clearly evident although not as strong as in the early months. The most likely explanation for the persistence of the effect in New South Wales is the continued intense level of enforcement. As Homel (1985) suggests, the typical waning effect may be due "as much to the failure to maintain enforcement levels as to the inevitable tendency for the effect to dissipate". There is, of course, a word of warning to government in this — even with a successful program, as in the New South Wales random breath testing program, the success or impact may be expected to continue only as long as the level of enforcement is maintained.

On a more optimistic note, Andenaes (1977, 1978) points to the long-term educative and moral influence of legal sanctions. Fear of legal sanctions may operate as a deterrent as long as the perceived probability of detection of illegal behaviour is in force, but in the long term, two other forms of control may come into operation — social sanctions imposed by others, especially peers, and self-imposed sanctions in the form of guilt. As indicated earlier, there are some signs of change in drink-driving habits and attitudes in this direction, with more conscious limits on drinking behaviour and with men being less likely to insist on driving after drinking. It may take some time, however, for changed drinking and driving behaviours to become habitual and to permeate throughout the various social groups to the extent where peer pressure and guilt take over from legal sanctions in controlling drink-driving.

Pending such an idealistic outcome, deterrent measures such as random breath testing must be maintained, and can play a significant role in reducing the road toll.

# APPENDICES

## APPENDIX I

## PENALTIES FOR DRINK-DRIVE OFFENCES

**Table A. Penalties for prescribed concentration of alcohol (PCA) offences and other related drink-drive offences**

| PCA offence | BAC reading | Offence | New penalties **(from 17 December 1982)** | Previous penalties **(from 15 December 1980)** |
|---|---|---|---|---|
| LOW PCA (Section 4E(1E) of Motor Traffic Act) | 0.05–0.079 | *1st offence* | $500 maximum fine; 6 mths' automatic disqualification or shorter period as determined by the court | $400 maximum fine; 6 mths' automatic disqualification or shorter period as determined by the court |
| | | *2nd offence** or 1st PCA 0.05, but previous PCA or major** offence | $1,000 maximum fine; 12 mths' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 3 mths | $1,000 maximum fine; 12 mths' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 3 mths |
| MEDIUM PCA (Section 4E(1F)) | 0.08–0.149 | *1st offence* | $1,000 maximum fine and/or 6 mths' gaol, 12 mths' automatic disqualification or such shorter or longer period as determined by the court not shorter than 3 mths | $1,000 maximum fine and/or 6 mths' gaol; 12 mths' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 3 mths |
| | | *2nd offence** or 1st PCA 0.08, but previous PCA or major** offence | $1,000 maximum fine and/or 6 mths' gaol, 3 years' automatic licence disqualification or such shorter or longer period as determined by the court but shorter than 6 mths | $1,000 maximum fine and/or 6 mths' gaol; 3 years' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 6 mths |

**APPENDIX I** *(continued)*

| PCA offence | BAC reading | Offence | New penalties **(from 17 December 1982)** | Previous penalties **(from 15 December 1980)** |
|---|---|---|---|---|
| HIGH PCA1 (Section 4E(1G)) | 0.15 or more | *1st offence* | $1,500 maximum fine and/or 9 mths' gaol, 3 years' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 6 mths | As for 0.08. No provisions for separate penalties for higher PCA readings |
| | | *2nd offence** or 1st 0.15 or more, but previous PCA or major** offence | $2,000 maximum fine and/or 12 mths' gaol, 5 years' automatic disqualification or such shorter or longer period as determined by the court but not shorter than 12 months | As for 0.08. No provisions for separate penalties for higher PCA readings |

* SECOND AND SUBSEQUENT OFFENCES: Penalties listed above alongside "Second Offence" apply if previous offence within 5 years.
** MAJOR OFFENCES: Include driving under influence, driving or attempting to drive with a higher PCA, culpable driving, driving dangerously or recklessly, manslaughter, and failing to stop after a casualty accident.

APPENDIX I *(continued)*

**Table B. Penalties for related drink-drive offences (from 17 December 1982)**

| Offence* | Penalty |
|---|---|
| Refuse breath-test (Section 4E(6)) ..... | $1,000 maximum fine |
| Refuse breath-analysis (Section 4E(7)) ..... | For 1st and 2nd or subsequent offences the same as HIGH PCA |
| Wilfully alter BAC (Section 4F(7)(b)) ..... | Same as HIGH PCA |
| Fail to comply with signal to stop at RBT station (Section 4F(2B)) ..... | $1,000 maximum fine |
| Drive under the influence of intoxicating liquor or of a drug (Section 5(2)) ..... | Same as MEDIUM PCA |
| *Other major offences* including drive dangerously or recklessly (Section 4)(Section 10A(2)(c)), and fail to stop after casualty accident (Section 8(1)) ..... | Same as HIGH PCA |

* See footnotes to Table A.

## APPENDIX II

## PENALTIES FOR OFFENCES ASSOCIATED WITH COMPULSORY BLOOD-TESTING

| Offence | Penalty |
|---|---|
| Hinder or obstruct a medical practitioner in attempting to take a blood sample from another person (Section 4F(6)) ..... | $1,000 maximum fine |
| Prevent medical practitioner from taking own blood sample or wilfully alter blood alcohol concentration (Section 4F(7)) ..... | *1st offence*<br>$1,500 maximum fine and/or 9 months' gaol; 3 years' automatic licence disqualification or such shorter or longer period as determined by the court but not shorter than 6 months<br>*2nd offence*<br>$2,000 maximum fine and/or 12 months' gaol; 5 years' automatic licence disqualification or such shorter or longer period as determined by the court but not shorter than 12 months |
| Medical practitioner failing to take blood sample (Section 4F(4)) or failing to follow procedure after taking blood sample (Section 4G(1)) or failing to submit blood sample for analysis (Section 4G(3)) ..... | Not specified |

## APPENDIX III

## NUMBER OF RANDOM BREATH TESTS BY STATE

| | No. |
|---|---|
| *New South Wales* | |
| 17 Dec 1982–31 Dec 1982 | 32,984 |
| 1983* | 890,288 |
| 1984 | 1,292,942 |
| *South Australia*[a] | |
| 15 Oct 1981–30 June 1982 | 46,045 |
| 1982/83** | 82,555 |
| 1983/84** | 123,953 |
| *Victoria*[b] | |
| June 1976–31 Dec 1976 | 6,550 |
| 1977* | 19,610 |
| 1978 | Over 39,000 |
| 1979 | 79,027 |
| 1980 | 82,021 |
| 1981 | 69,805 |
| 1982 | 72,957 |
| 1983 | 159,116 |

* Calendar year.
** Financial year.
[a] Figures provided by Special Projects Section, S.A. Police Department.
[b] Royal Automobile Club of Victoria (1984).

## APPENDIX IV

## CODING FORM FOR MEDIA CONTENT ANALYSIS

V.1 Date (Day, month, year) 1-6 ☐☐ ☐☐ ☐☐

V.2 *Day of week*
1 Sunday
2 Monday
3 Tuesday
4 Wednesday
5 Thursday
6 Friday
7 Saturday

7 ☐

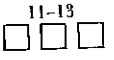
**APPENDIX IV** *(continued)*

V.3 *Name of paper*
1 Australian
2 Financial Review
3 National Times
4 Sydney Morning Herald
5 Daily Telegraph
6 Sun
7 Daily Mirror
8 Sunday Telegraph
9 Sun Herald
10 Newcastle Herald
11 Newcastle Sun
12 Wollongong Mercury
13
14
15

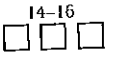
8–9 

V.4 *Page number*
e.g. 1 = Front page
2 = Front page teaser
3 = First 5 pages (not front)
4 = Middle
5 = Past middle
9 = Not known

10 

11–13 

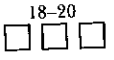
V.5 *Size of article* (column cms)

14–16 

V.6 *Size of headline* (square cms)

V.7 *Illustration*
0 None
1 Photograph-person
2 RBT operation
3 Map
4 Other (e.g. cartoon)

17 

18–20 

V.8 *Size of illustration* (square cms)

V.9 *Type of article*
1 News — story
2 Editorial
3 Letters to Editor
4 Feature e.g. Saturday Magazine in S.M.H.
5 Column 8 etc.
6 Campaign advertisement
7 Cartoon
8 Street poll etc.

21 

*Sources cited in article:* 0 = No, 1 = Yes

**APPENDIX IV** *(continued)*

V.10 Police _____ 22 ☐

V.11 Paciullo/Staysafe Committee _____ 23 ☐

V.12 Govt. source (e.g. Transport Minister) _____ 24 ☐

V.13 Political parties _____ 25 ☐

V.14 Business/business associations _____ 26 ☐

V.15 Community (e.g. individual citizen) _____ 27 ☐

V.16 Courts _____ 28 ☐

V.17 NRMA _____ 29 ☐

V.18 Non-govt associations _____ 30 ☐

V.19 Hospitals/medical _____ 31 ☐

V.20 Other (includes other media) _____ 32 ☐

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V.21 *Problem* addressed No 0 Yes 1 Main 2 — 33 ☐

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V.22 Road safety 34 ☐

V.23 Drink-driving 35 ☐

V.24 Alcohol/drugs 36 ☐

V.25 Other ( licences) _____ 37 ☐

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V.26 Description of RBT No 0 Yes 1 Main 2 — 38 ☐

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V.27 Legislation — RBT _____ 39 ☐

V.28 Legislation — .05/.08 _____ 40 ☐

V.29 Police operations (e.g. no. of tests, charges) _____ 41 ☐

V.30 Courts _____ 42 ☐

V.31 Other (specify) _____ 43 ☐

**APPENDIX IV** *(continued)*

V.32 Evaluating RBT — No 0, Yes 1, Main 2 — 44 ☐

CODING — None 0, Negative 1, 50/50 2, Positive 3

V.33 Effectiveness — road safety (fatalities/casualties) — 45 ☐

V.34 Effectiveness — drink-driving behaviour (deterrence) — 46 ☐

V.35 Effectiveness — community attitudes/knowledge re RBT, drink-driving ..... — 47 ☐

V.36 Effectiveness — efficiency of police/courts operations/equipment..... — 48 ☐

V.37 Cost/benefits — business (alcohol related) ..... — 49 ☐

V.38 Cost/benefits — business (non-alcohol) ..... — 50 ☐

V.39 Cost/benefits — other economic costs (e.g. medical) ..... — 51 ☐

V.40 Cost — civil rights/convenience ..... — 52 ☐

V.41 Cost — political ..... — 53 ☐

V.42 Cost — other (specify) _____ — 54 ☐

V.43 Other related topics — No 0, Yes 1, Main 2 — 55 ☐

V.44 Personality/human interest ..... — 56 ☐

V.45 Testing kits ..... — 57 ☐

V.46 Other (includes blood testing: specify) ..... — 58 ☐

V.47 .05 Limit — evaluation (as above: 0,1,2,3) ..... — 59 ☐

V.48 Court reports (non RBT-related) ..... — 60 ☐

V.50 Headline — 61–80

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## APPENDIX V

## TYPE OF ILLUSTRATION BY QUARTER OF YEAR: METROPOLITAN NEWSPAPERS

| | Photo-person | RBT operation | Map | Other | Total |
|---|---|---|---|---|---|
| *1982* | | | | | |
| Jul–Sep | 15 | 1 | 0 | 3 | 19 |
| Oct–Dec | 24 | 9 | 1 | 12 | 46 |
| *1983* | | | | | |
| Jan–Mar | 29 | 5 | 0 | 5 | 39 |
| Apr–Jun | 18 | 3 | 2 | 9 | 32 |
| Jul–Sep | 8 | 1 | 0 | 3 | 12 |
| Oct–Dec | 15 | 6 | 0 | 1 | 22 |
| *1984* | | | | | |
| Jan–Mar | 6 | 0 | 1 | 1 | 8 |
| Apr–Jun | 9 | 7 | 0 | 8 | 24 |
| TOTAL | 124 | 32 | 4 | 42 | 202 |

## APPENDIX VI

## FREQUENCY OF REFERENCES TO CONTENT CATEGORIES BY QUARTER OF YEAR

**Table A. Frequency of references to content areas by quarter of year: problem addressed (main issue reference in parentheses)**

| | Road safety | Drink-driving | Alcohol/Drugs | Other | Total |
|---|---|---|---|---|---|
| *1982* | | | | | |
| Jul–Sep | 41 (8) | 35 (17) | 16 (7) | 15 (8) | 67 (40) |
| Oct–Dec | 55 (14) | 43 (15) | 14 (4) | 10 (3) | 122 (36) |
| *1983* | | | | | |
| Jan–Mar | 26 (7) | 7 (2) | 9 (3) | 8 (3) | 50 (15) |
| Apr–Jun | 32 (15) | 20 (9) | 6 (5) | 1 (0) | 59 (29) |
| Jul–Sep | 9 (5) | 8 (5) | 2 (2) | 1 (1) | 20 (13) |
| Oct–Dec | 27 (10) | 7 (5) | 7 (3) | 7 (6) | 48 (24) |
| *1984* | | | | | |
| Jan–Mar | 21 (11) | 9 (1) | 5 (2) | 3 (1) | 38 (15) |
| Apr–Jun | 42 (22) | 21 (7) | 14 (9) | (4) | 91 (42) |
| TOTAL | 253 (92) | 150 (61) | 73 (35) | 33 (26) | 325 (214) |
| % of total articles | 35.1 | 21.1 | 10.1 | 8.5 | 74.8 |

## APPENDIX VI *(continued)*

**Table B. Frequency of references to content areas by quarter of year: description of RBT (main issue references in parentheses)**

| | Legislation | .05/.08 legislation | Police operations | Courts | Other | Total |
|---|---|---|---|---|---|---|
| *1982* | | | | | | |
| Jul–Sep | 34 (21) | 1 (0) | 7 (1) | 1 (0) | 0 (0) | 43 (22) |
| Oct–Dec | 23 (20) | 17 (2) | 56 (14) | 4 (1) | 6 (4) | 115 (41) |
| *1983* | | | | | | |
| Jan–Mar | 14 (2) | 12 (1) | 39 (9) | 8 (6) | 5 (2) | 58 (20) |
| Apr–Jun | 8 (0) | 3 (0) | 41 (7) | 2 (1) | 2 (2) | 56 (10) |
| Jul–Sep | 4 (1) | 2 (1) | 6 (3) | 0 (0) | 0 (0) | 12 (5) |
| Oct–Dec | 18 (3) | 8 (0) | 46 (16) | 3 (0) | 11 (2) | 86 (21) |
| *1984* | | | | | | |
| Jan–Mar | 9 (2) | 3 (0) | 12 (4) | 0 (0) | 0 (0) | 24 (6) |
| Apr–Jun | 2 (0) | 3 (0) | 42 (17) | 0 (0) | 4 (0) | 51 (17) |
| TOTAL | 162 (49) | 49 (4) | 250 (71) | 18 (8) | 28 (10) | 365 (142) |

**APPENDIX VI** *(continued)*

**Table C. Frequency of references to content areas by quarter of year: other related issues (main issue references in parentheses)**

| | Personality | Testing kits | Other | Court reports (non-RBT) | Total |
|---|---|---|---|---|---|
| *1982* | | | | | |
| Jul–Sep | 3 (0) | 3 (1) | 5 (2) | 1 (1) | 12 (6) |
| Oct–Dec | 5 (4) | 3 (2) | 20 (10) | 2 (0) | 30 (16) |
| *1983* | | | | | |
| Jan–Mar | 10 (5) | 6 (6) | 11 (8) | 30 (30) | 30 (22) |
| Apr–Jun | 12 (9) | 1 (0) | 3 (2) | 3 (2) | 19 (13) |
| Jul–Sep | 2 (0) | 1 (0) | 2 (2) | 3 (3) | 8 (5) |
| Oct–Dec | 7 (1) | 5 (2) | 3 (3) | 1 (1) | 16 (7) |
| *1984* | | | | | |
| Jan–Mar | 7 (1) | 3 (3) | 2 (2) | 7 (7) | 19 (13) |
| Apr–Jun | 10 (4) | 3 (3) | 8 (2) | 6 (6) | 27 (15) |
| TOTAL | 56 (26) | 25 (17) | 54 (31) | 26 (23) | 161 (97) |

## APPENDIX VII

**NUMBER OF EVALUATIVE REFERENCES BY ISSUE, QUARTERLY PERIOD AND TYPE OF EVALUATION (positive, neutral (50/50), negative)**

| | | 1982 | | 1983 | | | | 1984 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | Total |
| Road safety | +ve .. | 5 | 40 | 42 | 29 | 9 | 39 | 11 | 12 | 187 |
| | 50/50 .. | 4 | 16 | 4 | 8 | 2 | 5 | 6 | 7 | 52 |
| | −ve .. | 7 | 8 | 2 | 13 | 1 | 2 | 3 | 6 | 44 |
| Drink-drive behaviour | +ve .. | 7 | 16 | 8 | 7 | 6 | 13 | 2 | 6 | 65 |
| | 50/50 .. | 1 | 11 | 4 | 5 | 1 | 6 | 0 | 3 | 31 |
| | −ve .. | 0 | 7 | 1 | 16 | 5 | 9 | 6 | 5 | 49 |
| Community attitudes | +ve .. | 2 | 15 | 8 | 5 | 3 | 10 | 2 | 2 | 47 |
| | 50/50 .. | 0 | 8 | 7 | 10 | 1 | 7 | 3 | 5 | 41 |
| | −ve .. | 0 | 9 | 2 | 3 | 2 | 3 | 4 | 7 | 30 |
| Police efficiency | +ve .. | 3 | 4 | 3 | 5 | 1 | 4 | 1 | 6 | 27 |
| | 50/50 .. | 3 | 10 | 6 | 9 | 1 | 0 | 1 | 0 | 30 |
| | −ve .. | 3 | 6 | 10 | 6 | 1 | 3 | 3 | 4 | 36 |
| Liquor business | +ve .. | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 6 |
| | 50/50 .. | 0 | 11 | 5 | 2 | 0 | 2 | 0 | 2 | 22 |
| | −ve .. | 0 | 25 | 17 | 6 | 1 | 3 | 2 | 2 | 56 |
| Non-liquor business | +ve .. | 1 | 3 | 5 | 3 | 1 | 2 | 0 | 1 | 16 |
| | 50/50 .. | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 7 |
| | −ve .. | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 |
| Other economic effects (e.g. hospitals | +ve .. | 0 | 6 | 14 | 9 | 1 | 5 | 1 | 1 | 37 |
| | 50/50 .. | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| | −ve .. | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 4 |
| Civil rights | +ve .. | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| | 50/50 .. | 2 | 9 | 2 | 1 | 0 | 2 | 0 | 0 | 16 |
| | −ve .. | 6 | 26 | 6 | 3 | 1 | 1 | 1 | 0 | 44 |
| Political costs | +ve .. | 0 | 4 | 1 | 5 | 2 | 0 | 0 | 1 | 13 |
| | 50/50 .. | 1 | 9 | 3 | 3 | 0 | 17 | 3 | 0 | 36 |
| | −ve .. | 7 | 9 | 7 | 2 | 2 | 3 | 2 | 0 | 32 |
| .05/.08 | +ve .. | 0 | 1 | 6 | 1 | 1 | 0 | 0 | 1 | 10 |
| | 50/50 .. | 1 | 6 | 13 | 1 | 0 | 0 | 0 | 1 | 22 |
| | −ve .. | 0 | 3 | 6 | 1 | 1 | 1 | 3 | 3 | 18 |
| Number of articles | | 30 | 118 | 91 | 71 | 30 | 66 | 26 | 37 | 469 |

## APPENDIX VIII

## NAME OF COUNTRY NEWSPAPERS AND READERSHIP FIGURES BY TOWN

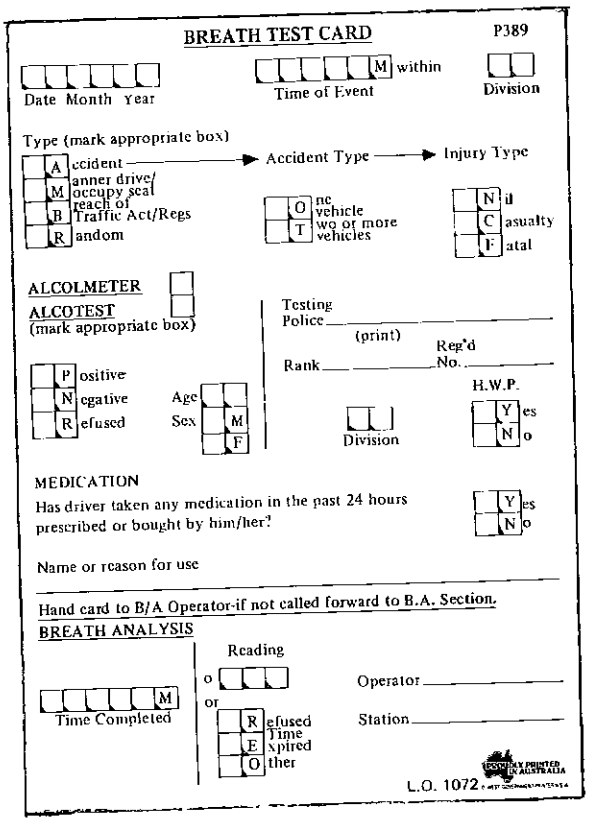
| Town | Newspaper | Readership figures |
|---|---|---|
| Albury | *Border Morning Mail* | 26,000 |
| Armidale | *Armidale Express* | 51,000 |
| | *Tableland Times* | 74,000 |
| Broken Hill | *Barrier Daily Truth* | 8,600 |
| Dubbo | *Daily Liberal* | 8,753 |
| Goulburn | *Goulburn Post* | 6,150 |
| Grafton | *Daily Examiner* | 7,210 |
| Griffith | *Area News* | 4,257 |
| Lismore | *Northern Star* | 22,005 |
| Newcastle | *Newcastle Morning Herald* | 60,000 |
| Orange | *Central Western Daily* | 8,500 |
| Tamworth | *Northern Daily Leader* | 12,983 |
| Wollongong | *Illawarra Mercury* | 38,457 |

*Source: Margaret Gee's Media Guide:* 18th ed. (1985).

## APPENDIX IX

## P389 BREATH TEST CARD

**P389 card completed for all breath analyses and non-random breath tests**



BREATH TEST CARD P389

Date Month Year

Time of Event within

Division

Type (mark appropriate box)

Accident

Manner drive/ occupy seat

Reach of Traffic Act/Regs

Random

Accident Type

One vehicle

Two or more vehicles

Injury Type

Nil

Casualty

Fatal

ALCOLMETER

ALCOTEST

(mark appropriate box)

Positive

Negative

Refused

Age

Sex M F

Testing Police

(print)

Rank Reg'd No.

Division

H.W.P. Yes No

MEDICATION

Has driver taken any medication in the past 24 hours prescribed or bought by him/her?

Yes No

Name or reason for use

Hand card to B/A Operator-if not called forward to B.A. Section.

BREATH ANALYSIS

Reading

or

Refused

Time Expired

Other

Time Completed

Operator

Station

L.O. 1072

## APPENDIX X

## BAC DISTRIBUTION OF DRIVERS TESTED IN ADELAIDE ROADSIDE SURVEY BY AGE AND SEX

| | MEN | | | WOMEN | | |
|---|---|---|---|---|---|---|
| | 1981 % | 1982 % | 1983 % | 1981 % | 1982 % | 1983 % |
| Under 21 years | 5.79 | 3.60 | 6.61 | 0.45 | 1.84 | 1.56 |
| 21–29 years | 7.29 | 6.07 | 6.50 | 1.73 | 2.25 | 2.89 |
| 30–50 years | 6.85 | 6.68 | 6.82 | 1.10 | 0.95 | 1.86 |
| Over 50 years | 7.40 | 6.64 | 8.33 | 1.62 | 1.02 | 2.75 |

*Source:* McLean et al. (1984), p.3.31.

## APPENDIX XI

## COMPARISON OF DRINK-DRIVE OFFENDERS IN SOUTH AUSTRALIA BY MODE OF APPREHENSION (RANDOM VERSUS NON-RANDOM)

**Mode and date of apprehension, BAC and demographic characteristics, persons appearing on PCA charges in courts of summary jurisdiction, 18 months before and after RBT became operational on 15 October 1981**

| | 18 months before RBT operational | 18 months after RBT operational | |
|---|---|---|---|
| Characteristics of PCA defendants | Police Patrol (N=3748) | Police Patrol* (N=3930) | RBT Station (N=605) |
| % males | 93.7 | 93.1 | 90.6 |
| % unemployed | 18.8 | 28.2 | 14.7 |
| % never married | 59.5 | 65.9 | 48.8 |
| Average blood alcohol content | .153 | .153 | .133 |
| Average age (years) | 29.1 | 28.5 | 32.8 |
| % In each age group | | | |
| • 18–19 | 16.6 | 16.2 | 7.5 |
| • 20–24 | 35.2 | 34.5 | 23.6 |
| • 25–29 | 18.9 | 18.6 | 20.4 |
| • 30–39 | 19.5 | 17.0 | 25.0 |
| • 40 & over | 9.8 | 13.7 | 23.5 |

*Sources:* Office of Crime Statistics and South Australian Police Department. Only two thirds of the RBT apprehensions could be matched with court figures. Nonetheless analysis of RBT data indicates that this was a representative sample.

* Includes some RBT cases which could not be matched, accounting for at most 7% of the total in this column.

(Reproduced with kind permission of Bungey & Sutton (1984).)

## APPENDIX XII

## SUMMARY OF SURVEY RESULTS ON EXPOSURE TO RANDOM BREATH TESTING

**By age and sex**

| | MEN Age (years) | | | | | WOMEN Age (years) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 18–24 | 25–44 | 45–64* | 65+* | Total | 18–24 | 25–44 | 45–64* | 65+* | Total |
| *Cashmore (1983) March* | | | | | | | | | | |
| % of sample breath-tested | 26.9 | 12.6 | 10.0 | 1.6 | 12.6 | 7.5 | 5.0 | 1.3 | 0.0 | 3.6 |
| % of drink-drive group tested | 27.3 | 12.3 | 9.5 | 0.0 | 12.8 | 8.6 | 7.0 | 3.0 | 0.0 | 5.7 |
| % of sample knowing others tested | 63.3 | 56.3 | 48.3 | 40.1 | 53.0 | 57.6 | 44.5 | 33.3 | 32.0 | 41.7 |
| % of drink-drive group knowing others | 63.3 | 58.2 | 50.6 | 42.4 | 55.3 | 66.9 | 48.1 | 42.6 | 44.1 | 50.2 |
| *Cashmore & Vignes (1984) March* | | | | | | | | | | |
| % of sample tested | 44.2 | 32.3 | 23.9 | 12.3 | 29.2 | 24.4 | 20.8 | 9.9 | 6.0 | 15.9 |
| % of drink-drive group | 40.5 | 33.6 | 27.6 | 15.0 | 31.1 | 27.5 | 23.7 | 11.2 | 9.2 | 21.2 |
| % of sample knowing others | 70.0 | 66.3 | 66.5 | 42.7 | 62.7 | 84.6 | 67.5 | 78.0 | 40.1 | 65.8 |
| % of drink-drive group | 69.5 | 69.2 | 68.9 | 54.4 | 67.0 | 84.6 | 73.1 | 66.4 | 36.8 | 71.2 |
| *Homel (1983a) February* | | | | | | | | | | |
| % tested/passenger | 22.5 | 6.6 | 15.3 | — | 11.8 | 7.7 | 9.6 | 7.0 | — | 6.9 |
| % driven past RBT site | 67.4 | 47.4 | 47.5 | 18.5 | 48.3 | 69.2 | 43.8 | 40.4 | 9.1 | 40.2 |
| % knowing someone | 81.6 | 60.5 | 49.2 | 22.2 | 57.4 | 42.3 | 43.8 | 43.9 | 12.1 | 38.1 |
| *Homel (1983c) April* | | | | | | | | | | |
| % tested/passenger | 32.4 | 17.9 | 7.9 | 4.8 | 15.3 | 20.8 | 13.6 | 8.8 | 8.9 | 12.5 |
| % driven past RBT site | 73.0 | 62.6 | 41.3 | 22.6 | 51.2 | 64.2 | 50.9 | 40.0 | 22.2 | 46.0 |
| % knowing someone | 78.4 | 65.0 | 58.7 | 32.3 | 60.3 | 67.9 | 59.9 | 56.8 | 31.1 | 56.8 |
| *ABS (South Australia) October 1983* | | | | | | | | | | |
| % tested | 42.0 | 21.9 | 15.4 | 4.1 | 21.4 | 18.1 | 8.1 | 4.4 | * | 8.6 |
| % seen RBT site | 49.7 | 58.4 | 50.2 | 30.0 | 51.3 | 63.9 | 59.9 | 49.7 | 24.7 | 55.5 |

* For Cashmore (1983) and Cashmore & Vignes (1984), the relevant age breakdown is 45-59 years and 60+.

## APPENDIX XIII

## SUMMARY OF SURVEY RESULTS ON REPORTED CHANGES IN DRINKING AND DRIVING BEHAVIOUR

**Table A. Percentage of sample reporting changes in survey behaviour by age and sex**

| | MEN Age (years) | | | | | WOMEN Age (years) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 18–24 | 25–44 | 45–64* | 65+* | Total | 18–24 | 25–44 | 45–64* | 65+* | Total |
| Cashmore (1983) March 1983* | 52.1 | 42.8 | 48.3 | 25.9 | 41.5 | 30.3 | 26.1 | 13.5 | 7.2 | 19.2 |
| Cashmore & Vignes (1984) March 1984* | 47.8 | 56.0 | 42.4 | 34.5 | 47.1 | 33.1 | 31.2 | 6.8 | 4.5 | 20.4 |
| Homel (1983a) February 1983 | 44.9 | 59.2 | 57.6 | 18.5 | 50.2 | 34.6 | 23.3 | 21.1 | 9.1 | 21.7 |
| Homel (1983b) April 1983 | 55.4 | 69.1 | 41.3 | 17.7 | 49.1 | 45.3 | 38.4 | 13.6 | 4.4 | 27.8 |
| ABS (South Australia) October 1983 | 43.3 | 45.3 | 28.1 | 18.4 | 37.7 | 37.2 | 23.5 | 9.3 | 10.3 | 22.4 |

* These figures are based on slightly different age groupings: 45-59, 60+ years.

**APPENDIX XIII** *(continued)*

**Table B. Percentage of sample reporting changes in behaviour by type of drinker (quantity)**

| | Type of drinker | | | | |
|---|---|---|---|---|---|
| | Non | Light* | Medium* | Heavy* | Total |
| *Homel (1983a) February 1983* | | | | | |
| Men | | 49.4 | 77.1 | 76.5 | 62.7 |
| Women | | 43.7 | 63.6 | 100.0 (3 cases) | 48.2 |
| Total | | 47.4 | 74.6 | 78.4 | 57.9 |
| *Homel (1983b) April 1983* | | | | | |
| Men | | 49.6 | 75.3 | 77.3 | 63.6 |
| Women | | 45.1 | 69.2 | 83.3 | 50.5 |
| Total | | 47.2 | 73.4 | 77.8 | 58.0 |
| *ABS (South Australia) October 1983*** | | | | | |
| Men | | 36.7 | 53.0 | 51.1 | 37.7 |
| Women | | 24.5 | 47.5 | 55.1 | 22.4 |
| Total | | 31.4 | 52.5 | 56.0 | 31.5 |

* Type of drinker defined by quantity/frequency:
Light: 1-3 standard drinks per day;
Moderate: 4-6 standard drinks per day;
Heavy: 7+ standard drinks per day;

** Calculation of type of drinker based on consumption of alcohol over last 7 days averaged over 7 days whereas Homel's calculation was based on average consumption for each drinking day (for drinking licence holders only).

**APPENDIX XIII** *(continued)*

**Table C. Percentage of sample reporting changes in behaviour by type of drinker (predominant drink)**

| | Predominant drink | | | | | |
|---|---|---|---|---|---|---|
| | Beer | Wine | Spirits | Fortified wine | Low alcohol beer | Total |
| *ABS (South Australia) October 1983* | | | | | | |
| Men | 43.8 | 36.9 | 30.6 | 18.4 | NA | 37.7 |
| Women | 32.5 | 25.8 | 22.0 | 14.6 | NA | 22.4 |
| Total | 42.7 | 29.8 | 25.4 | 16.4 | NA | 31.5 |

## APPENDIX XIV

## RETAIL SALES: HOTEL, LIQUOR STORES, CLUBS ($ MILLION) BY MONTH AND BY STATE

| | N.S.W. | VIC | QLD | W.A. | S.A. | TAS | AUST |
|---|---|---|---|---|---|---|---|
| *1982* | | | | | | | |
| April | 144.4 | 84.8 | 75.5 | 33.3 | 27.0 | 9.5 | 378.0 |
| May | 148.0 | 83.7 | 72.6 | 31.8 | 24.2 | 9.3 | 373.9 |
| June | 140.5 | 83.8 | 73.9 | 30.4 | 23.3 | 8.0 | 362.5 |
| July | 141.5 | 87.3 | 73.6 | 32.3 | 24.4 | 9.0 | 371.7 |
| Aug | 145.6 | 89.9 | 71.4 | 31.4 | 24.8 | 9.4 | 375.1 |
| Sept | 145.0 | 84.4 | 73.3 | 33.2 | 25.3 | 9.5 | 375.5 |
| Oct | 158.8 | 96.2 | 80.1 | 38.2 | 29.4 | 9.9 | 417.1 |
| Nov | 160.2 | 102.9 | 74.9 | 38.2 | 29.1 | 10.2 | 420.2 |
| Dec | 185.9 | 136.9 | 94.2 | 44.0 | 38.9 | 13.9 | 518.9 |
| *1983* | | | | | | | |
| Jan | 151.3 | 105.1 | 74.8 | 37.9 | 31.3 | 10.2 | 413.8 |
| Feb | 135.5 | 95.3 | 68.9 | 33.1 | 28.3 | 9.5 | 374.2 |
| March | 149.7 | 107.8 | 75.9 | 37.3 | 30.6 | 10.3 | 419.5 |
| April | 151.0 | 100.3 | 73.7 | 33.5 | 27.8 | 9.7 | 398.9 |
| May | 146.3 | 98.5 | 73.9 | 34.5 | 27.2 | 9.3 | 393.3 |
| June | 139.4 | 95.5 | 74.2 | 37.1 | 26.5 | 9.3 | 385.7 |
| July | 143.2 | 97.4 | 76.9 | 37.7 | 27.0 | 9.3 | 396.5 |
| Aug | 145.2 | 102.9 | 76.3 | 38.4 | 28.8 | 9.9 | 406.7 |
| Sept | 146.9 | 102.3 | 80.0 | 40.1 | 30.1 | 10.2 | 414.3 |
| Oct | 154.8 | 104.9 | 83.1 | 40.6 | 31.2 | 10.7 | 430.8 |
| Nov | 158.3 | 109.7 | 83.7 | 41.4 | 32.5 | 10.7 | 440.4 |
| Dec | 196.8 | 154.2 | 107.9 | 52.8 | 43.9 | 15.3 | 577.0 |
| *1984* | | | | | | | |
| Jan | 167.9 | 100.9 | 77.2 | 41.5 | 32.7 | 11.1 | 435.7 |
| Feb | 160.0 | 94.2 | 71.1 | 42.4 | 30.1 | 10.6 | 413.1 |
| March | 167.4 | 99.9 | 77.8 | 42.1 | 32.4 | 11.5 | 435.8 |
| April | 156.5 | 92.7 | 76.2 | 38.0 | 29.8 | 10.9 | 408.9 |
| May | 155.0 | 93.4 | 75.8 | 38.8 | 29.6 | 10.8 | 408.4 |
| June | 154.9 | 93.8 | 77.9 | 40.4 | 29.3 | 10.7 | 412.1 |
| July | 148.4 | 88.1 | 79.4 | 37.1 | 28.5 | 10.4 | 396.9 |
| Aug | 161.0 | 92.5 | 85.1 | 40.3 | 31.0 | 11.0 | 426.3 |
| Sept | 161.5 | 93.5 | 83.1 | 40.0 | 30.2 | 11.4 | 425.1 |
| Oct | 161.3 | 97.1 | 83.9 | 42.4 | 33.1 | 12.2 | 435.7 |
| Nov | 175.3 | 104.3 | 88.3 | 44.2 | 35.2 | 13.1 | 466.0 |
| Dec | 224.0 | 133.9 | 108.4 | 55.3 | 47.0 | 17.1 | 592.4 |

## APPENDIX XV

## SALES OF BEER, WINE AND SPIRITS ($ MILLION) BY QUARTER AND BY STATE

| Quarter | N.S.W. | VIC | QLD | W.A. | S.A. | TAS | AUST |
|---|---|---|---|---|---|---|---|
| *1977* | | | | | | | |
| Dec | 357.9 | 201.2 | 135.4 | 80.6 | 63.6 | 24.8 | |
| *1978* | | | | | | | |
| March | 324.9 | 185.6 | 122.8 | 75.4 | 59.1 | 23.0 | |
| June | 314.3 | 176.5 | 120.9 | 71.5 | 54.7 | 23.2 | |
| Sept | 340.7 | 186.3 | 126.4 | 78.1 | 57.3 | 22.7 | |
| Dec | 411.7 | 220.1 | 152.4 | 96.1 | 68.5 | 26.7 | |
| *1979* | | | | | | | |
| March | 373.1 | 212.4 | 140.1 | 88.7 | 68.7 | 26.0 | 909.0 |
| June | 359.6 | 194.9 | 137.3 | 83.9 | 61.3 | 25.1 | 861.0 |
| Sept | 388.6 | 200.8 | 145.1 | 83.8 | 61.9 | 25.6 | 905.9 |
| Dec | 454.3 | 244.4 | 166.2 | 99.4 | 76.4 | 29.9 | 1,070.2 |
| *1980* | | | | | | | |
| March | 419.7 | 232.1 | 151.1 | 92.5 | 75.0 | 26.5 | 996.9 |
| June | 417.4 | 216.0 | 150.9 | 88.5 | 71.1 | 26.1 | 970.0 |
| Sept | 432.6 | 227.6 | 161.8 | 91.5 | 70.2 | 26.9 | 1,010.6 |
| Dec | 517.0 | 279.0 | 189.6 | 108.4 | 85.5 | 30.8 | 1,210.3 |
| *1981* | | | | | | | |
| March | 476.8 | 250.8 | 170.0 | 101.7 | 80.0 | 28.9 | 1,108.2 |
| June | 470.8 | 236.3 | 175.7 | 98.9 | 76.4 | 27.4 | 1,085.5 |
| Sept | 489.1 | 248.7 | 187.4 | 105.7 | 76.5 | 28.4 | 1,135.8 |
| Dec | 567.1 | 302.7 | 222.0 | 119.3 | 93.1 | 33.6 | 1,337.8 |
| *1982* | | | | | | | |
| March | 529.2 | 284.9 | 197.8 | 114.1 | 90.9 | 31.1 | 1,248.0 |
| June | 468.1 | 271.8 | 221.5 | 101.3 | 75.8 | 25.6 | 1,181.2 |
| Sept | 463.0 | 283.8 | 217.5 | 105.9 | 79.8 | 27.5 | 1,196.4 |
| Dec | 548.2 | 379.2 | 248.8 | 133.3 | 102.1 | 33.1 | 1,464.2 |
| *1983* | | | | | | | |
| March | 470.0 | 342.6 | 217.1 | 118.8 | 92.0 | 30.9 | 1,286.8 |
| June | 464.4 | 324.3 | 220.5 | 110.8 | 85.7 | 28.0 | 1,251.7 |
| Sept | 468.0 | 338.2 | 232.3 | 116.3 | 91.5 | 28.9 | 1,294.1 |
| Dec | 544.4 | 411.3 | 274.2 | 135.2 | 93.1 | 33.6 | 1,538.9 |
| *1984* | | | | | | | |
| March | 504.9 | 334.8 | 225.3 | 125.6 | 99.6 | 32.7 | 1,341.9 |
| June | 506.1 | 326.6 | 230.7 | 116.1 | 93.9 | 31.8 | 1,324.8 |
| Sept | | | | | | | |
| Dec | | | | | | | |

## APPENDIX XVI

## ESTIMATED NET LOSS OF FINE REVENUE ASSOCIATED WITH RANDOM BREATH TESTING

(a) *Gain in fine revenue*

- *1983*
  - 5,348 PCA charges from random breath testing
  - If 98.5% were found proven (as in previous years), this means 5,268 convictions
  - Average fine in 1983 was $433.52
  - 5,268 convictions, averaging $433.52 = $2.28 million
- *1984*
  - 5,096 PCA charges
  - 5,020 convictions (98.5% of charges)
  - Estimated average fine of $450.00
  - 5,020 convictions, averaging $450.00 = $2.25 million

*Total gain for 1983 and 1984* = $4.54 million

(b) *Loss of revenue from fewer charges in 1983 and 1984*

- *1983*
  - Number of proven offences in 1983 = 16,894
  - Average number of proven offences 1981/1982 = 24,765

    Difference = 7,871
  - Associated loss of revenue in 1983 = 7,871 x $433.52 = $3.41 million
- *1984*
  - Estimated difference in the number of proven offences = 7,800
  - Associated loss of revenue in 1984 = 7,800 x $450 = $3.51 million

*Total loss for 1983 and 1984* = $6.92 million

(c) *Estimated net loss of fine revenue* = (b) − (a) = $2.38 million

## APPENDIX XVII

## ESTIMATED SAVINGS ASSOCIATED WITH REDUCTION IN NUMBER OF FATALITIES AND CASUALTIES

**Table A. Summary of average accident cost per person ($)**

| | 1978* | 1983** | 1985** | 1984 estimate*** |
|---|---|---|---|---|
| Fatality | 157,085 | 265,000 | 300,000 | 282,500 |
| Major injury | 27,670 | 47,000 | 52,000 | 49,500 |
| Minor injury | 3,190 | 5,000 | 6,000 | 5,500 |
| Property damage | 620 | 1,000 | 1,100 | 1,050 |

*Source*

* Atkins (1981).

** Office of Road Safety estimates.

*** Average of 1983-1985.

APPENDIX XVII *(continued)*

**Table B. Reduction in fatalities and associated savings**

| | 1983 | 1984 |
|---|---|---|
| Number of fatalities | 966 | 1,034 |
| Predicted number* | 1,301 | 1,301 |
| Difference | 335 | 267 |
| Average cost of fatality | $265,000 | $282,500 |
| Total cost savings | $88.78 million | $75.43 million |

* Traffic Accident Research Unit.

APPENDIX XVII *(continued)*

**Table C. Reduction in casualties and associated savings**

| | 1983 | 1984 |
|---|---|---|
| Number of casualties | 34,942 | 36,437 |
| Predicted number* | 39,429 | 39,429 |
| Difference | 4,487 | 2,992 |
| Assume 5% major** injury | 224 | 150 |
| Average cost of major injury | $47,000 | $49,500 |
| Total cost, major injury | $10.53 million | $7.43 million |
| Assume 95% minor injury | 4,263 | 2,842 |
| Average cost of minor injury | $5,000 | $5,500 |
| Total cost, minor injury | $21.32 million | $15.63 million |
| TOTAL COST SAVING FOR INJURIES | $31.85 million | $23.06 million |

* Traffic Accident Research Units' monthly bulletins of preliminary crash data.
** Categories 4 and 5 on Abbreviated Injury Scale (Atkins, 1981) — critical (survival uncertain) and severe (life-threatening).

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# BUREAU OF CRIME STATISTICS AND RESEARCH

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In 1983-84 the Bureau revised its method of publishing, closing all previous series. Our regular publications, such as Court Statistics, will continue to appear. The titles appearing after the dotted line have been produced in the new format.

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