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Best practice review of drink driving enforcement in South Australia

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ABSTRACT

The Drug and Alcohol Task Force of the Road Safety Advisory Council has initiated this project to maximise the effects of drink driving enforcement in South Australia. This report describes the outcome of a review based on an international literature review, analysis of police data, comparisons with interstate data and discussions with personnel at varying levels within the hierarchy of the SA Police. Ways in which drink driving enforcement may be enhanced in South Australia are discussed.

KEYWORDS

Drink Drive, Enforcement, Random Breath Testing, Mobile RBT

Summary

Drink driving continues to be a major causal factor in fatal and injury crashes. The Alcohol and Drugs Taskforce was asked by the Regulation and Enforcement Subcommittee to recommend a project with the greatest potential to reduce the number of drink drive crashes in South Australia. The Taskforce concluded that the most effective project would be to explore the means by which drink-drive enforcement might be improved. The outcomes from the project are to be used to assist the SA Police in maximising the effectiveness of police enforcement in reducing drink driving in South Australia.

The current project consists of a review of drink driving enforcement in South Australia, as of June 2007, conducted with the following stages:

- A review of national and international literature on optimal drink driving enforcement practices
- The creation of a snapshot of current South Australian practices taking into account current legislation, supporting mass media and police data
- A comparison of the South Australian situation with that of other jurisdictions
- Interviews with SA Police operating within differing levels of the organisational hierarchy

A literature review has revealed three recent Australian reports on drink driving enforcement. These highlight a number of issues relevant to the South Australian context.

There was a need to conduct static Random Breath Testing (RBT) operations in the early part of the evening (i.e. 6 to 10pm) so that potential drink drivers see drink driving enforcement on their way to drinking venues. This may deter drink driving by influencing subsequent alcohol consumption or the decision to drive. To detect actual drink drivers, RBT is also needed later in the evening (after midnight) at times when the highest drink drive rates occur. The precise proportion of each enforcement method needed to minimise drink driving behaviour is unknown.

A mixed model of enforcement, covert enforcement in conjunction with overt enforcement, is needed to increase the perceived link between visible enforcement activities and detection. There is also a strong need to balance targeted and random activities, and detection and deterrence. In practice, mobile RBT should be used in conjunction with static RBT whenever possible. Mobile RBT should not become the sole means of detection at the expense of general deterrence.

In rural areas, static RBT based primarily on deterrence is unlikely to have a great effect on rural drivers. Therefore, detection of drink drivers would be the most useful strategy in such communities and is best achieved through unpredictable, smaller, covert mobile operations. Covert mobile operations are valuable in that they provide a solution to the limited police personnel available in rural regions and the 'grapevine effect' known to undermine the value of a highly visible static RBT station. However, covert operations should complement overt testing methods and all enforcement strategies should consider local factors.

When RBT targets are set, they should include time-based factors (i.e. hours of drink drive enforcement) and ideally use crash data to measure outcomes.

Other literature has found that RBT operations are effective in reducing overall numbers of crashes and in New Zealand benefit cost ratios in the order of 26:1 have been calculated. While there is some evidence to suggest that mass media can produce results in isolation, many studies point to the fact that an enhanced effect can be achieved when mass media is coordinated to support drink driving enforcement activity.

A legislative review indicated that South Australia was on a par with the provisions of drink driving legislation in other states. The most significant change in legislation in recent years was the introduction of mobile RBT and the lifting of prescribed period restrictions in mid-2005. This has meant that SAPOL can now engage in enforcement activities in line with interstate practices.

A snapshot of drink drive enforcement in South Australia was obtained through the review of SAPOL data and interviews with SAPOL personnel. This has indicated reasonable activity by Local Service Areas (LSAs), operating autonomously, to meet targets set by a corporate command. The arguments for this structure are that LSAs have ownership of drink driving enforcement (i.e. it becomes their problem) and they also become more accountable in terms of reaching performance targets. These targets consist of the number of overall tests performed and the proportion of detections.

The reliance on the autonomy of LSAs has many positive and negative aspects, however, in the context of this report, most are seen as positive. An issue that cannot be meaningfully addressed is if the LSAs are properly resourced to conduct adequate levels of drink driving enforcement without distraction. A comparison with other states suggests that South Australia is lagging behind the best performing states in terms of the number of overall tests and detections performed. The lack of mobile RBT in recent years may be a significant contributor to this situation. Data from late 2005 and 2006 will be needed to see if this situation has changed. This would likely have much improved detection rates but only a modest increase in the number of overall tests. A further review of the equipment possessed by police forces in other states would also assist in the interpretation of the circumstances.

The maintenance of the Northern and Southern Traffic Enforcement Sections is seen as beneficial and maintains a necessary higher profile focus on traffic enforcement. However their individual impact is difficult to assess and the extent to which they can bolster LSA RBT activity over the whole state given current resources must be limited. The assignment of dedicated traffic police to the LSAs is also viewed as a positive influence provided that there are adequate resources to permit these personnel to remain focused on traffic enforcement duties.

The Traffic Support Branch provides timely information to LSAs when requested, however the task of recording and retrieving data does not appear to be streamlined. The difficulty of entering sometimes duplicate data into the various computer systems was highlighted on more than one occasion as being problematic.

Currently, the number of breath tests in South Australia is recorded by LSAs who either count discarded mouthpieces or use a counting device. There appears to be confusion as to whether electronic data from breath testers can be downloaded. Many jurisdictions in Australia either have, or are moving towards the data logging of preliminary breath tests. There would be significant benefits if data were to be recorded from alco-testers in the field and downloaded. SAPOL could increase its intelligence in relation to how much drink drive enforcement was being conducted and the times at which this was occurring. Such information would be invaluable to the planning of future enforcement activities. However, this would require some administration and cultural issues to be overcome.

There has been very little mass media content focused on drink driving enforcement in the past few years. Current feedback amongst a small sample of 16 to 30 year olds suggests that the perception of being caught if engaging in drink driving behaviour is small. More robust testing is needed to develop a coordinated mass media campaign that compliments police enforcement. If mass media campaigns are to be used, the coordination of enforcement activity with mass media publicity should be given high priority.

Conclusions

The introduction of mobile RBT operations outside of prescribed periods in 2005 has clearly enhanced the ability of the police to perform drink drive enforcement and bring South Australia in line with national practices.

Corporate policies are in place to try to ensure that LSAs are held accountable for their drink driving enforcement performance. The mix of enforcement approaches is left to the discretion of the LSA commanders, however, the high number of tests required lends itself more towards testing for quantity rather than quality. This is not inconsistent with the general deterrence principle of RBT, however, a degree of specific deterrence also needs to be delivered with detections. It is understood that proportion of detections by mobile and static RBT is also a performance measure and, if adhered to, should deliver some element of quality into the testing.

The following items should be considered to further enhance drink driving enforcement in South Australia:

- The combination of static RBT with mobile RBT is viewed as particularly effective and should be conducted whenever resources allow
- Mobile RBT is considered the most effective form of drink driving enforcement in rural areas
- Ensure that mobile RBT does not become the sole means of enforcement at the expense of general deterrence (unlikely given current testing targets)
- National and international evidence suggests that static and mobile RBT, as conducted in Australia, continues to be the most effective method for drink driving enforcement
- The literature suggests that time based allocations for drink driving enforcement should also be specified; ideally alcohol related crash data should also be used but interpretation can be difficult, particularly in terms of individual interventions
- To alter motorists behaviour for the rest of the evening and avoiding drink driving episodes altogether, RBT should continue to operate earlier in the evening (e.g. 6pm to 10pm) and preferably near drinking establishments
- RBT operations are also required later in the evening (e.g. midnight to 2am) when most drink driving occurs for general and specific deterrence
- There is scope to improve data collection and reporting systems
- It is essential that mass media campaigns are coordinated with enforcement activities
- On a per capita basis, there is scope for South Australia to increase its testing and detections to be more in line with national practices

It should be noted that these conclusions are made based on data available to 2004 when mobile RBT had been introduced for prescribed periods only. Further analysis of data following the lifting of restrictions on mobile RBT operations from late 2005 and 2006 would be necessary to ensure that the current situation was properly interpreted. This would likely result in much improved detection rates but only a modest increase in the number of overall tests.

What is not considered by this review are the resources available to SAPOL when compared to the Police organisations in other states due to the difficulty in obtaining this type of information.

Contents

1 Introduction

Drink driving continues to be a major causal factor in fatal and injury crashes. The Alcohol and Drugs Taskforce was asked by the Regulation and Enforcement Subcommittee to recommend a project with the greatest potential to reduce the number of drink drive crashes in South Australia. The Taskforce concluded that the most effective project would be to explore the means by which drink-drive enforcement might be improved. The outcomes from the project are to be used to assist the SA Police in maximising the effectiveness of police enforcement in reducing drink driving in South Australia.

The current project consists of a review of drink driving enforcement in South Australia, as of June 2007, conducted with the following stages:

- A review of national and international literature on optimal drink driving enforcement practices
- The creation of a snapshot of current South Australian practices taking into account current legislation, supporting mass media and police data
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It should be noted that it would be unrealistic to expect that this report can suggest what level and combination of drink drive enforcement is optimal. To do so implies that data relating to enforcement that has exceeded the point of maximum return is available. To our knowledge such data does not exist, nor are such levels of enforcement likely to be adopted by practicing police forces in our context. The report does, however, report on what is considered "best practice" given reasonable enforcement resources from a national and international perspective.

2 Literature review: What is considered best practice?

The majority of research concerned with identifying best practice principles for random breath testing and drink driving enforcement has been conducted in Australia.

The present review strongly features three recent Australian reports that examined best practice approaches to drink driving enforcement based primarily on literature reviews. The most recently published report relied heavily on Victorian data examined in previous studies by the Monash University Accident Research Centre (MUARC), in addition to an international literature review (Delaney *et al.*, 2006). The other two reports interviewed police and road safety experts from most states and territories within Australia and New Zealand (Harrison *et al.*, 2003; Hendrie, 2003). Rather than repeating a discussion of the literature and interviews covered in these reports, salient findings from the reports and new literature are examined.

2.1 Police enforcement

2.1.1 Random breath testing

Random Breath Testing (RBT) is a form of drink driving enforcement that was first introduced into Australia, in the state of Victoria, in 1976. Other states introduced RBT in the 1980s with South Australia first implementing RBT in 1981 in what was termed a 'very low key' manner (Homel, 1990).

Currently in South Australia, and in most states of Australia, RBT operations may be either 'stationary', or 'mobile'. Traditional stationary or static RBT involves setting up checkpoints on the side of the road. Motorists passing these points are randomly selected to be pulled over to the side of the road where they must submit to a preliminary breath test. If a driver records a BAC over the legal limit, they are required to submit to a breath test on evidentiary equipment. Mobile RBT, a method used only in recent years, allows police in any mobile police vehicle (i.e. car or motorcycle) to stop vehicles at random and breath test the driver. An important aspect of RBT, regardless of method, is that any driver may be pulled over and breath tested without any suspicion that the driver is impaired by alcohol.

The theoretical basis for RBT lies in Deterrence Theory (Homel, 1988; Ross, 1982). According to this theory, the aim of RBT is to deter potential drink drivers rather than detect drink drivers. Deterrence is based primarily on the risk of detection and the swiftness and severity of punishment. Wagenaar and Maldonado-Molina (2007) maintain that the swiftness or celerity of punishment is more important than the severity of penalties. Specific deterrence occurs when a drink driver is apprehended and punished, and consequently is deterred from future drink driving. General deterrence results from the perception that there is a high risk of detection and punishment for drink driving. Homel (1990) identified a number of factors that assist in maximising the perceived risk of detection: RBT must be highly visible, maintain a high level of testing, be unpredictable with respect to location, must give the impression of being ubiquitous, be difficult to evade once seen, and must be well publicised.

Australian studies evaluating the effectiveness of RBT, in terms of crash reductions, have varied significantly in their findings. Estimates range from a 35 per cent decrease in fatal crashes (Henstridge *et al.*, 1997) to no significant differences in fatal crashes (Henstridge *et al.*, 1995). Hendrie (2003) conducted a comprehensive review of studies examining the effectiveness of RBT in Australia and concluded that RBT was not always effective in reducing crash and injury outcomes although there was widespread community support. The inconsistent findings were attributed to methodological difficulties encountered in the evaluations, leading to the conclusion that "no evaluations using effective research design have been conducted" (p.18). The two main problems were a lack of data on alcohol crashes and separating the effects of RBT from other road safety programs.

Hendrie (2003) also emphasised that RBT programs vary significantly in how they are delivered, managed, and in the intensity of operations across jurisdictions. Indeed, RBT is not a uniform intervention, so it is not surprising that there are contrasting findings regarding its effectiveness. The challenge is then to find which operations and strategies are most effective in reducing drink driving behaviour. Hendrie (2003) also remarked that "most evaluations of random breath testing have assessed the effect of the overall program, rather than comparing alternative strategies or different components of enforcement and public education programs" (p.24).

In order to maximise the effectiveness of RBT operations, the following sections review Australian and international literature to determine which aspects of random breath testing formulate best practice.

2.1.2 Operations

Time of day, day of week

Homel (1990) suggests that to increase the perceived probability of detection (general deterrence), random breath testing should be conducted on days and at times when it is more likely to be seen by potential drink drivers. Alternatively, to detect drink drivers, random breath testing needs to be at times when most drink driving occurs. Homel (1990) maintains that experimentation is required to determine the balance of testing at times and places of high traffic volume when the incidence of drinking and driving is low, and when the incidence of drink driving rates is high but the traffic volume is low.

Night-time surveys of drink driving provide information about times when the incidence of drink driving is greatest. Observations from the most recent late night surveys in metropolitan Adelaide indicated that drink driving rates were highest on Wednesday and Thursday nights, and after midnight (Kloeden & McLean, 1997). Roadside breath testing surveys conducted more recently in Perth during 1999 (Friday to Sunday, 10pm-3am) found that drink driving rates were highest after midnight and on Friday nights (Ryan, 2000). Time series analysis of Tasmanian RBT data indicated that tests conducted before midnight were more important as a general deterrent than late night or daytime testing. However, low numbers of crashes and tests after midnight precluded definitive conclusions (Henstridge et al., 1997).

Harrison (2001) suggests that potential drink drivers need to know about the risk of detection before going to the place of drinking. For this reason, he recommends placing enforcement activity closer to where the decision to drink drive is made. According to his research, drink driving decisions are made at two locations or points in time: driving to the alcohol outlet, rather than using other transport options, and the level of consumption of alcohol after driving to the alcohol outlet. The decision to drive is influenced by word-of-mouth while the amount of alcohol consumed is influenced by personal awareness of enforcement activities (i.e. direct contact with RBT). However, enforcement appears to have no effect on the decision to drive once large amounts of alcohol have been consumed. Therefore, enforcement activities are more likely to be influential earlier on in the decision making process. Consequently, enforcement should be on roads where it is highly visible and aim to increase the perceived risk of detection before drinking occurs (early evening) so that potential drink drivers will recall enforcement activities when making the decision about how much alcohol to drink.

To summarise, the use of RBT earlier in the evening (8-10pm) could have some direct influence on decisions by drivers whether to risk drink driving or not upon arriving at drinking establishments. The combination of early evening and late night RBT operations could maximise the effect of RBT, however, the proportion of each approach that would maximise deterrence is unknown.

Method of RBT operations and spatial deployment

A consistent issue in determining best practice RBT enforcement is finding the appropriate balance between overt or highly visible stationary RBT seeking to maximise exposure to RBT and low profile covert operations such as mobile RBT. The former has an effect of general deterrence while the latter essentially focuses on detection or specific deterrence. Homel's Deterrence Model supports highly visible RBT, as this is important in increasing the perceived risk of detection.

However, decision-making models have recently challenged the Deterrence Model, in terms of the effects of RBT enforcement practices. Decision making models suggest a greater emphasis should be placed on specific deterrence or detection because exposure to apprehension and punishment may reduce the likelihood that drink driving behaviour is considered appropriate at the time when making the decision whether to drive after consuming alcohol (Harrison, 2001). Thus, highly visible RBT should be accompanied by covert mobile operations.

From a practical viewpoint, mobile operations are useful in discouraging drivers from using back streets to avoid static RBT (Harrison et al., 2003). However, few studies have evaluated the effectiveness of mobile RBT methods and in most studies, RBT data have been confounded with those of stationary RBT (Harrison et al., 2003). Data from South Australia indicates that mobile RBT is associated with much higher detection rates than static RBT; 29 versus 5.7 drivers detected with an illegal BAC per thousand tested, respectively (Baldock *et al.*, 2007). Trends in mobile RBT detection rates in South Australia and other Australian states are discussed in Sections 3.2.1 and 3.2.2.

Nevertheless, while mobile RBT might be more effective in detecting drink drivers, it is important that mobile operations do not become the sole method of enforcement at the expense of general deterrence, but compliment visible RBT (Harrison et al., 2003; Homel, 1990).

Deterrence theory advocates that highly visible RBT should also be accompanied by selective targeted RBT operations to maximise detection of persistent drink drivers. Targeted testing refers to RBT located on roads in close proximity to known problem licensed venues. Harrison *et. al.* (2003) maintain that the location of targeted covert operations should be intelligence led such that target venues are determined by alcohol sales, local knowledge, and data collected from offenders about their drinking location. However, caution must be exercised so that the latter method does not reflect police practices. It should be noted that enforcement strategies are unlikely to have a significant effect on high-risk or recidivist drink drivers (Williams *et al.*, 2007).

Harrison et al. (2003) suggest that strategies need to be formulated so that patrons do not view the venue as "high-risk". Persistent enforcement surrounding a specific venue could result in drink drivers avoiding the location, rather than reducing drink driving behaviour. In general, repetitive enforcement operations, particularly in rural areas, should involve a high degree of randomness about frequency and operation times to result in reduced drink driving, rather than avoidance behaviour.

In summary, a mixed model of covert enforcement in conjunction with overt enforcement, is needed to increase the perceived link between visible enforcement activities and detection. There is also a strong need to balance targeted and random activities, and detection and deterrence. However, there are no suggestions in the literature prescribing what balance these activities should be conducted at.

Rural enforcement issues

Random breath testing methods used in urban areas are not as successful in rural areas and this has prompted considerable research into rural drink driving enforcement. Indeed, there are a number of factors that differentiate drink driving in rural regions from that in urban

areas: long travel distances to drinking venues, a lack of public transport, limited police resources, close knit communities with strong informal communication networks, and local police are well known in the community (Ferguson *et al.*, 1999).

Of these problems, the existence of the strong informal communication network is of most concern. Rural residents quickly hear about the location of RBT operations, which enables drink drivers to avoid stationary RBT sites if they have good knowledge about back roads. Such avoidance behaviour was confirmed by a survey of rural bar patrons (Harrison & Fitzharris, 1999). Approximately half of those surveyed said they would use alternative routes to get home if aware of an RBT site. Thus, many rural drivers aware of enforcement appear not to adjust their perceived level of detection nor change their drink driving behaviour.

Experiments with a number of drink driving enforcement methods in rural Victoria suggested that mobile RBT surrounding booze buses (i.e., stationary RBT) increased detection rates (Healy & Wylie, 1998). Moreover, although a formal evaluation was not undertaken, broad trends in alcohol-related crashes were encouraging, suggesting that covert operations should be used to compliment overt testing in rural areas.

Harrison (2001) investigated three drink driving enforcement strategies in rural communities in Victoria and South Australia: overt, covert and a combination of both. Consistent with previous research, covert operations resulted in higher detection rates. Of interest, survey results from this study showed that the general community became more aware of enforcement during overt operations while bar patrons were more aware of enforcement during covert operations. However, survey results also demonstrated a lack of correlation between perceived risk of detection and experience of encountering RBT enforcement among rural drivers. Harrison suggested that the nature of rural enforcement might be responsible for this observation; following blitzes, there are long periods without any drink driving enforcement.

While covert operations appear to be promising in rural areas, high visibility overt enforcement still has an important role in increasing community awareness. Harrison et al. (2003) recommends that highly visible enforcement in rural towns with high social cohesion (regardless of the town population size) can improve its effectiveness by changing enforcement locations at irregular intervals to reduce the effect of local 'word-of-mouth' and heighten the perception of the level of enforcement activities.

There is an argument that detection-based enforcement in rural towns may be best conducted using non-local police. This would minimise the pressure for local police to be less stringent and provide additional policing resources. However, this strategy may be costly and remove police resources from other areas where they are needed. This issue is discussed further in later sections.

On a general note, it is important that RBT enforcement methods adapt to the characteristics of the region where it is being implemented, rather than assuming a 'best practice' model fits every situation (Harrison et al., 2003; Hendrie, 2003). Enforcement strategies should match the particular environmental, social and cultural factors unique to the local area.

Overall, it appears that static RBT based primarily on deterrence is unlikely to have a great effect on rural drivers. Therefore, detection of drink drivers would be the most useful strategy in such communities and is best achieved through unpredictable, smaller, covert mobile operations. Covert mobile operations are valuable in that they provide a solution to the limited police personnel available in rural regions and the 'grapevine effect' known to undermine the value of a highly visible static RBT station. However, covert operations should compliment overt testing methods and all enforcement strategies should consider local factors.

2.1.3 Strategic management

Setting RBT targets

Target levels of RBT testing in jurisdictions are usually test-based, time-based, detection-based, crash-based or a combination of these. Numerical test-based targets, set either as a total number or as a proportion of licensed drivers, put pressure on police to conduct highly visible deterrence based campaigns that occur when traffic volumes are greatest but not necessarily at high alcohol times. For example, in Queensland a high level of breath testing was recommended with a quota of tests to licensed drivers of 1:1. A review of police operational policies and practices revealed that police felt reaching quotas placed too much emphasis on quantity rather than quality of testing, leading to RBT operations conducted at low alcohol/high traffic volume times (Hart *et al.*, 2003).

A positive effect of test-based targets is that they will result in high levels of campaign awareness and general deterrence. However, awareness of enforcement does not necessarily lead to an increased perceived risk of detection (i.e. drink driving may occur when there is little high visibility enforcement) (Harrison et al., 2003). On the other hand, detection oriented targets would result in higher perceived risk of detection but at the expense of general deterrence. In addition, the long-term goal of reducing the detection rate would be inconsistent with the short-term goal of increasing detections.

Harrison et al. (2003) recommends that setting a target number of person hours of drink driving enforcement for each jurisdiction provides the most flexibility for local area management and allows strategies that are more balanced. Crash reduction targets (i.e. alcohol-related crashes) also provide a clear outcome based assessment of police performance although many other factors may influence these figures (e.g. enforcement operations in other suburbs). Crash-based outcomes may be better for assessing local enforcement operations in rural areas where geographic isolation means there is less influence from activities in other areas. However, crash based outcomes can be difficult to interpret especially in the context of individual interventions. A combination of time-based targets for enforcement activities and the use of alcohol related crash outcomes appear to be desirable.

Structure of police organisation and operations

There is on-going debate concerning whether centralised or decentralised approaches to policing provide the best model for drink driving enforcement. The main advantage of regionalisation is that it provides better flexibility for enforcement activities and operations are able to respond better to local issues. One of the disadvantages is that regionalised operations are not under as much scrutiny as if there were close central control.

With respect to the management of enforcement operations, information and strategies developed by a central traffic support unit are important for statewide drink driving enforcement programs. Guidance given directly to local police by a central intelligence led source and local knowledge are both important for addressing specific local drink driving problems. Harrison et al. (2003) suggested setting up a direct traffic contact person in each jurisdiction so that regular meetings can be held between local and central traffic support police to exchange information and encourage stronger links.

We are not aware of any studies that have formally evaluated the effectiveness of the decentralisation of police operations. However, some studies conducted interviews with police and identified some operational and motivational issues concerned with regionalisation. For example, Harrison et al. (2003) noted that police expressed concern about a lack of experience and skills in breath testing operations and management with regionalisation. They also articulated concern about a lack of focus on traffic issues if the local commanding officer did not see it as a priority. Harrison et al. (2003) suggested that

processes such as setting enforcement targets or auditing at the local level would improve accountability and ensure drink driving is a priority.

Interviews with police have also suggested that some police felt crime reduction should have a greater priority for policing than traffic enforcement (Harrison et al., 2003; Hart et al., 2003). Harrison et al. (2003) suggested that police could be motivated to promote drink driving enforcement by emphasising the link between drink driving and other criminal activity (e.g. the visible presence of police RBT activities might deter criminal activity). Harrison et al. (2003) also recommended that the value of deterrence, not just detection, be promoted among police to facilitate a greater appreciation of the importance of highly visible RBT operations.

Part of the decentralisation process typically involves traffic duties (i.e., RBT activities) transferred to police conducting general duties rather than dedicated traffic police. Indeed, interviews with general duties police have revealed that some felt RBT should not be their responsibility, but that of specialised traffic police (Harrison et al., 2003). There are few studies evaluating the effects of structural reorganisation among police. However, Mathijseen (1995) reported a significant drop in RBT testing levels in the Netherlands following a reorganisation of Dutch police when traffic law enforcement was integrated into general police duties.

Some jurisdictions in Australia (e.g. Victoria) have successfully utilised a centrally located traffic alcohol unit to take on the responsibility for achieving specific drink driving enforcement targets and to assist jurisdictions in conducting RBT (Harrison et al., 2003). A central dedicated unit has the flexibility to move into targeted areas, particularly in rural areas, to conduct additional enforcement operations. Such a unit can provide extra resources for regions and overcome community involvement issues faced by local police. In addition, officers in these units develop a high level of expertise in drink driving enforcement, which can result in greater productivity and commitment to the cause (Hendrie, 2003).

Intelligence led enforcement

In order to improve the quality and outcomes of drink driving enforcement activities, comprehensive intelligence led enforcement is essential. Traffic intelligence systems should make use of information relating to crashes, traffic volumes, alcohol sales and previous enforcement activities when planning new RBT operations. The issue is how to best assimilate and use this information to influence the timing, location and style of enforcement activities.

Hendrie (2003) suggests using geographic information systems to map and identify locations where a large number of alcohol crashes occur or locate sites where high proportions of drivers test over the legal BAC limit. Although location and time specific targeting is popular politically and focuses on crash outcomes, Harrison et al. (2003) warn that enforcement activities based entirely on crash and offence data (i.e. black-spot approach) can become predictable in terms of location or time of day. Consequently, enforcement campaigns need to retain an element of randomness or unexpectedness to have a strong impact on driver behaviour.

Information from alcohol sales can be useful for targeted enforcement in identifying licensed venues with high alcohol sales. In addition, information from travel surveys could be used to determine what routes drivers take to and from drinking locations.

Harrison et al. (2003) noted that many jurisdictions in Australia either have, or are moving towards the data logging of preliminary breath tests. This data can be used to formulate enforcement strategies, particularly for determining high alcohol locations, days, and times. However, Harrison et al. observed that not all these jurisdictions made significant use of this information.

2.2 Publicity

Homel (1990) specified that publicity accompanying RBT activities should not simply be educational but have a deterrent value. Effective drink driving enforcement strategies should focus on the perceived and actual risk of detection, automatically apply certain consequences to detection, and be part of potential offender's awareness prior to drinking (Harrison, 2003).

Harrison (2001) suggested that publicity focusing on the early decisions in the chain of decision making relating to drink driving (i.e. how people get to drinking venues) may be more beneficial than targeting decisions later on (i.e. how to get home).

Elvik and Amundsen (2000) considered media campaigns to be an ineffective drink driving countermeasure in Sweden, except in some cases when combined with other measures such as enforcement and legislation changes. Elliot (1993) reported that enforcement accompanied by mass media publicity increased the effectiveness of campaigns. Elliot (1993) also found that there were some cases where television campaigns were effective without enforcement. Delhomme (1999) reported that alcohol-related media campaigns reduced crashes by 6.9 per cent during a campaign, and the effects were greater in conjunction with enforcement and/or new legislation.

Tay (2005) reanalysed drink driving enforcement and publicity campaigns in Victoria and found that the effectiveness of advertising and enforcement campaigns appeared not to be dependent on each another. This finding suggests that it may be possible for publicity campaigns to work without being accompanied by enforcement.

Most literature suggests that mass media combined and coordinated with enforcement activities can be effective in reducing crashes. Although there is some evidence that mass media can be effective in isolation to enforcement, the largest effects are observed when it is coordinated with enforcement activities. The communication content and style also plays a role in translating a campaign into behavioural outcomes. For example, there is little point focussing on the threat of being detected if police are not visible on the roads.

2.3 International research evidence

The majority of studies evaluating best practice strategies for random breath testing activities have been conducted in Australia. However, various forms of random breath testing are undertaken in New Zealand (Compulsory Breath Testing - CBT) and an increasing number of countries in Europe. In the United States, 'selective breath testing' (SBT) of drivers is conducted at sobriety checkpoints. Selective testing differs from the RBT approach where all stopped drivers are tested. Drivers stopped at the SBT checkpoint can only be breath tested if police have reason to suspect they have been drinking. Consequently, this review of best practice drink driving enforcement in the international literature does not cover studies evaluating selective breath testing.

2.3.1 Europe

There is general consensus in the literature that random breath testing, rather than testing "on-suspicion" is the most effective countermeasure against drink driving. Several recent studies from Europe have reinforced the value of police enforcement and random breath testing. For example, Makinen and Zaidel (2003) found that police enforcement is the most cost effective road safety measure. They estimated that drink driving enforcement resulted in fatal and injury crash reductions of 9 per cent and 7 per cent, respectively. Moreover, their review of enforcement practices revealed that European countries with a long history of drink driving enforcement including low legal limits, a relatively high objective risk of detection, and supporting mass media had the lowest drink driving rates.

A meta-analysis of 39 studies evaluating the effects of drink driving enforcement (either alone or in conjunction with other measures) showed that significant reductions in all crash severity types could be accomplished (Elvik, 2001). Delaney et. al. (2006) states that the magnitude of these reductions appear to be smaller than those found for drink driving enforcement programs in Australia. They suggest that the lower magnitude of effects reported in Elvik's study were attributable to the inclusion of enforcement practices that were not conducted randomly and the restricted testing of only those suspected of exceeding the BAC limit. In contrast to Delaney et al. (2006), Hendrie (2003) reported that not all Australian studies have found RBT to be effective.

With respect to the different components of police enforcement of drink driving, ICF consulting (Consulting, 2003) rated random breath testing as the most effective countermeasure, followed by the severity and certainty of sanctions, testing intensity, and then the legal blood alcohol level. Note that Wagenaar and Maldonado-Molina (2007) argue that the swiftness or celerity of punishment after drink driving detection is more effective than the severity of penalties. Their findings were based on research that examined licence suspension policies and fatal crash data in 46 US states.

The ICF report (2003) gave 14 European Union member states a weighted numerical score for drink driving enforcement based on the existence of random breath testing activities, severity and certainty of sanctions, testing intensity, and the legal blood alcohol level. These scores were compared to the percentage of drivers involved in fatal crashes. There were no correlations between fatal crash involvement and enforcement practices and sanctions. The failure to find any relationships appeared to be at least partly due to the unreliable alcohol-related crash data. Koornstra and colleagues (2002) also found problems with incomplete or inconsistent crash data among several European countries (i.e., Sweden, Netherlands, United Kingdom). For this reason, few studies have attempted to estimate the reduction in crashes for drink driving enforcement. Based on their best estimate, Koornstra et al. (2002) reported that that drink driving crashes could be reduced by approximately 10 per cent in the UK and the Netherlands.

From the analyses mentioned above, the benefits of drink driving enforcement gained by the 14 European Union member states were calculated under two scenarios: if enforcement was implemented as was conducted in the best performing member state, and a hypothetical 'perfect state' enforcement program that met the requirement of an EC Working paper (Consulting, 2003). Sweden was considered the best performing member state in terms of drink driving countermeasures; they had a 0.020 mg/L BAC limit, a random breath testing program, a testing intensity of 22 per cent of licensed drivers per year, and very severe sanctions if detected drink driving. Based on previous research, it was calculated that a benefit-cost ratio of 8.1 could be attained if all member states adopted the same enforcement practices as Sweden. Furthermore, if the testing was increased to an intensity of 40 per cent of licensed drivers (i.e., perfect state' scenario), a benefit-cost ratio of 4.7 could be achieved (note that the 40 per cent testing rate is similar to the lowest testing levels of Australian States). These estimates also accounted for costs associated with publicising the drink driving countermeasures. However, the level of publicity costs was not specified.

A review prepared by experts from across the European Union examined successful strategies and cost-effective enforcement methods for a number of driver behaviours including drink driving (ETSC, 1999). A number of sensible 'elements of successful strategies' for drink drive enforcement were derived, based on knowledge of current enforcement practices and studies reported in the literature. However, these studies did not evaluate the individual components of drink driving enforcement separately and generally appear to follow deterrence theory. The 'elements of successful strategies' included:

- Increased perceived probability of detection through programs that involve: high levels of testing achieved primarily with RBT (a recommended testing level of at least one in ten drivers every year, or one in three if possible), unpredictable

enforcement in terms of time and location, widespread deployment, enforcement that is difficult to avoid, and highly visible police operations.

- Targeted enforcement (i.e. around licensed premises) to maximise detection of persistent drink drive offenders.
- Enforcement accompanied by publicity to inform and increase public awareness of enforcement activities (i.e., increase perceived risk of detection). Publicity can also assist in reducing the public acceptance of drink driving.
- Enforcement that is monitored carefully and altered if necessary. Continual contact between police, researchers and policymakers is important.

Overall, evidence from European literature supports intensive breath testing routines (and severe sanctions) to maximise the effect of drink driving enforcement and to reduce alcohol-related crashes.

New Zealand

Miller, Blewden and Zhang (2004) calculated benefit-cost ratios of three different approaches to Compulsory Breath Testing (CBT), the New Zealand equivalent of RBT. The approaches included: 1) intensive, moderate profile CBT, 2) CBT with an enhanced media campaign, and 3) 'aggressively' visible booze buses and enhanced community campaign. Although all forms showed greater benefits than costs, the CBT approach encompassing aggressive, highly visible booze buses and a community campaign (the most comprehensive package) was the most cost effective, in terms of reducing late night serious and fatal crashes (estimated 54% reduction in these crashes nationally). In terms of cost benefit analysis, it was found that the comprehensive package of enforcement was most cost beneficial with a return on investment of 26.1. CBT alone and CBT operating with a media campaign were also cost beneficial but to a lesser extent (14.4 and 18.8, respectively).

3 Current snapshot of South Australian practices

While the previous sections have reviewed the current Australian and international literature to determine what is considered best practice in terms of drink driving enforcement, this section examines the current drink driving enforcement practices in South Australia. This section begins by reviewing South Australian legislation related to drink driving. Following this, the level of RBT testing and detections is explored and comparisons are made with other Australian jurisdictions. Based on interviews with police, drink driving enforcement activities are described and issues surrounding these activities are discussed. Finally, recent drink driving publicity campaigns are examined in terms of activities and the level of advertising.

3.1 Current legislation

Major events in relation to South Australian legislation and drink driving enforcement are summarised in Table 3.1. RBT was introduced in South Australia in June 1981.

In June 2003, South Australian Parliament passed a Bill legislating the use of mobile testing during 'prescribed periods' and in September 2003, actual mobile RBT testing commenced. The 'prescribed periods' included long weekends, school holidays and four other periods during the year that did not exceed 48 hours. The additional 48-hour periods were determined by the Minister for Police and had to be advertised to the public at least two days prior to the commencement of each period. The intention of this amendment was to widen the powers of police to require drivers to submit to a breath test during holiday periods when there was increased traffic and a potential increase in the risk of crashes. South Australia was the only Australian jurisdiction to restrict mobile testing to 'prescribed periods'.

Legislation passed through State Parliament in June 2005 enabling mobile random breath testing to be conducted on a full-time basis rather than only during prescribed periods.

Table 3.1
Timeline of major events influencing drink driving enforcement

Year	Selected Drink Driving Legislation
1981	RBT introduced in South Australia
1985	Blood alcohol content level for holders of learner and probationary licences set at zero
1991	Legal limit for blood alcohol content of all full licence holders changed from 0.08 to 0.05
1997	Levels of RBT testing increased significantly (doubled) in South Australia
2001	Alcohol ignition interlock program introduced in South Australia (July)
2003	Mobile random breath testing was introduced on a limited basis (prescribed periods only) in South Australia (September)
2005	Unrestricted mobile RBT commenced in South Australia (June)
2005	Immediate loss of licence for blood alcohol content of 0.08 and over (December)

A comparison was made with legislation that existed in association with drink driving enforcement in other states. The following is a summary of the main findings of the review. A more detailed table documenting where legislation in other states and territories differs from South Australian legislation is included in Appendix A. The various Legislative Acts that were examined included:

South Australia	Road Traffic Act 1961
Northern Territory	Traffic Act 1996
Queensland	Transport Operations (Road Use Management) Act 1995
Australian Capital Territory	Road Transport (Alcohol and Drugs) Act 1977
Western Australia	Road Traffic Act 1974
Tasmania	Road Safety (Alcohol and Drugs) Act 1970
New South Wales	Road Transport (Safety and Traffic Management) Act 1999
Victoria	Road Safety Act 1986

Most States and Territories had similar offence categories defined by Blood Alcohol Concentration (BAC). Nationally, 0.05 is the prescribed percentage of alcohol at which offences commence.

The categories for drink driving offences in South Australia, Northern Territory, Australian Capital Territory and New South Wales are as follows:

- Category 1 0.05 – 0.08
- Category 2 0.08 – 0.15
- Category 3 > 0.15

Queensland has two categories: A general limit (0.05) and a high limit (0.15) as does Western Australia (0.05 and 0.08).

Other variations of note included:

- No consumption of liquor is allowed by a driver or passengers while a car is in motion (Tasmania).
- It is an offence for drivers who are unlicensed, on a learners permit or under 18 years of age to have a blood alcohol level of 0.02% (Western Australia); all other states are zero.
- A compulsory blood test is required if a person over 15 years of age is involved in a motor vehicle accident and attends hospital for treatment (and includes those who are deceased) Victoria, Australian Capital Territory, New South Wales, Northern Territory and South Australia (14 years of age). Queensland, Western Australia and Tasmania did not have this provision.
- Police officers can take charge and remove (Australian Capital Territory and New South Wales) or impound (Tasmania) a vehicle. In South Australia, the police officer can direct the driver to leave or not enter a vehicle and can impound the keys.
- Immediate licence disqualification or suspension is available in all but Western Australia and Tasmania.

Fine, disqualification and imprisonment varied amongst the jurisdictions but with the exception of Western Australia and Victoria were loosely based on the same category and

first, second or subsequent offence provisions (see Appendix B). Western Australia and Victoria were markedly different in this regard and incremented punishment corresponding to 0.01 increases in the prescribed concentration of alcohol from 0.05. Western Australia is the only state that has provision for permanent licence disqualification under certain circumstances.

Legislation regarding driving with a prescribed concentration of drugs was integrated into the same legislation for South Australia, Victoria, New South Wales and Tasmania. Victoria and SA are currently active in the mass drug testing of motorists and both require that a breath test for alcohol is first performed on the motorist prior to the drug test.

South Australia and Victoria are the only States that have very detailed requirements for the conduct of driver testing stations (i.e. Random Breath Testing). Most other jurisdictions have provision for a police officer to ask a driver to stop a vehicle and perform a breath test. This is only possible in the Northern Territory and the Australian Capital Territory if there are reasonable grounds for suspicion that the driver had been drinking. In practice, this meant that mobile RBT was available in most other jurisdictions. The introduction in June 2005 of new legislation in South Australia permitting mobile RBT at all times means that SAPOL can now engage in similar drink driving enforcement practices to those used in other jurisdictions.

Overall, South Australia compares favourably with the provisions of drink driving related legislation in the other jurisdictions.

3.2 Data

The data in this section was obtained from Traffic Intelligence, SAPOL as part of the regular Annual Performance Indicators of Enforced Behaviours report produced by CASR (refer to Baldock et. al., 2007). At the time of writing, only complete data to the end of 2004 were available.

3.2.1 South Australia

Levels of RBT testing

The following data represent a combination of both static and mobile testing to give a complete picture of the operation of RBT in South Australia. Table 3.2 summarises the changes in the number of random breath tests conducted from 2000 to 2004 for metropolitan and rural areas. Rural testing refers to testing conducted outside the Adelaide metropolitan area and includes regional cities such as Mount Gambier and Port Augusta.

The total number of tests (653,333) performed in 2004 exceeded the target of 600,000. This level of testing was seven per cent higher than the level in 2003 but marginally lower than the record number of tests conducted in 2002. The increase in testing in 2004 was similar in metropolitan and rural regions. This increase is most likely due to mobile RBT operating for prescribed periods in the full 12 months of 2004, whilst, in 2003, mobile RBT only operated from September. As an indication, 13,191 (2.2%) and 46,030 (7.0%) of the tests are attributed to mobile RBT in 2003 and 2004 respectively.

Table 3.2
Number of random breath tests in South Australia, 2000-2004

Year	Metro	Rural	Total	% difference from previous year
2000	326,168	208,405	534,573	-4.9
2001	290,853	250,282	541,115	1.2
2002	387,867	294,664	682,531	26.1
2003	334,338	274,331	608,649	-10.8
2004	364,856	288,477	653,333	7.3

Table 3.3 shows the day of week data for 2004 split into its static and mobile RBT components. The greatest percentage of tests was conducted on Fridays and weekends with fewer tests conducted on Tuesdays and Wednesdays. The day of week of testing by the two methods was similar except that mobile RBT was over-represented on Saturdays. This could have been the result of 'prescribed periods' for mobile RBT being more likely to include weekends.

Table 3.3
Random breath tests performed by day of week in 2004 (expressed as a percentage of total tests each year) for static and mobile RBT

Testing type	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Static	12.7	7.6	7.6	14.9	21.3	17.8	18.1
Mobile	11.9	6.1	5.8	9.6	20.2	26.7	19.6
Total	12.6	7.5	7.5	14.6	21.2	18.4	18.2

Table 3.4 shows the time of day data for 2004, separately for static and mobile RBT. Testing was conducted most commonly between 2pm and midnight. Mobile RBT was over-represented during the hours from midnight to 4am, while a considerable amount of static RBT was performed during daylight hours.

Table 3.4
Random breath tests performed by time of day in 2004 (expressed as a percentage of total tests in the year) for static and mobile RBT

Type	12-2 AM	2-4 AM	4-6 AM	6 AM-2 PM	2-4 PM	4-6 PM	6-8 PM	8-10 PM	10-12 PM
Static	3.7	2.2	2.0	20.7	12.3	12.3	12.3	21.8	12.8
Mobile	10.4	3.4	1.5	18.4	8.1	8.8	14.7	19.9	14.6
Total	4.2	2.3	1.9	20.6	12.0	12.0	12.5	21.7	12.9

Drink driving detections

The number of drink driving detections for the years 2000 to 2004 is presented in Table 3.5. The number of drink driving detections has risen each year since 2000, with 6,058 detections in 2004 being the highest number recorded during this period. Note that this refers to drink driving detections by all methods, including detections subsequent to crash involvement and traffic offences. The number of drink drivers detected using RBT was 3,503, with 2,364 of these detected in the metropolitan region and 1,139 detected in rural regions.

Table 3.5
Drink driving detections in South Australia 2000-2004

Year	Drink Driving Detections	Per cent change from previous year
2000	4,037	N/A
2001	4,787	18.6
2002	5,074	6.0
2003	5,802	14.3
2004	6,058	4.4

RBT detection rates

The detection rates in the following section refer to detection by RBT only. There is no single sufficient measure of the effectiveness of RBT operations but RBT detection rates provide some estimate of RBT effectiveness. A lower detection rate may indicate greater effectiveness of RBT and other drink driving countermeasures, although it is very important to note that detection rates are also affected by operational factors such as the locations, times, and types of RBT used.

The RBT detection rates for the metropolitan and rural areas for the years 2000 to 2004 are shown in Table 3.6 in terms of the number of drivers found to be over the legal limit per thousand tested. In this case, drivers are only included if they recorded an illegal BAC using evidentiary testing. The RBT detection rate in 2004 was the highest since 2000 for both metropolitan and rural areas, and the overall detection rate. One of the reasons for this increased detection rate could have been the greater use of mobile RBT in 2004, which was expected to be a better means of detecting drink drivers, particularly those trying to avoid static RBT stations. Indeed, in 2004 the detection rate for mobile methods was greater than that for static testing (29 versus 5.7 drivers detected per thousand tested with an illegal BAC per thousand tested, respectively).

Table 3.6
RBT detection rates, 2000-2004 (number of drivers detected with an Illegal BAC per thousand tested)

Year	Metro	Rural	Total
2000	3.2	2.1	2.8
2001	5.4	1.8	3.7
2002	4.0	1.9	3.1
2003	5.8	2.9	4.5
2004	6.5	3.9	5.4

Detection rates by day of week for static and mobile RBT are provided in Table 3.7. Note that detections here are for drivers testing positive on the screening test rather than on the evidentiary test. The detection rates on screening tests are higher than on the evidentiary tests. In general, detection rates were higher later in the week for both types of testing, consistent with data from previous years.

Table 3.7
RBT detection rates (screening tests only) in 2004 (number of drivers detected per 1,000 tested) for static and mobile testing, by day of week and location

Testing	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Static	2.4	4.0	5.4	6.2	6.3	6.3	7.1
Mobile	19.4	22.3	28.4	35.9	27.6	33.2	29.5
Total	3.5	5.0	6.6	7.6	7.7	9.1	8.8

Detection rates by time of day for mobile and static RBT were calculated and are shown in Table 3.8. Note that these detection rates are also for drivers detected with illegal BACs in the initial screening test. Similar to previous years, the highest detection rates in 2004 were between 10pm and 6am for both methods. Mobile RBT detection rates were substantially higher than detection rates resulting from static RBT.

Table 3.8
RBT detection rates (screening test only) by time of day in 2004 (number of drivers detected with an Illegal BAC per thousand tested) by location and RBT method

Method	12-2 AM	2-4 AM	4-6 AM	6 AM-2 PM	2-4 PM	4-6 PM	6-8 PM	8-10 PM	10-12 PM
Static	11.88	27.82	12.52	1.98	2.35	2.85	4.40	5.39	12.76
Mobile	57.87	92.86	87.90	9.30	13.67	17.26	26.02	23.31	38.51
Total	19.96	34.78	16.65	2.61	2.89	3.59	6.19	6.55	14.82

3.2.2 Interstate comparisons

Levels of RBT testing

A comparison of South Australian data was compared with six other Australian jurisdictions as shown in Table 3.9. Total numbers (where possible) are expressed in terms of the relative contributions of mobile and static testing methods. South Australia had the lowest proportion of all mobile RBT that was conducted, most likely due to the requirement that such testing could only be conducted during 'prescribed periods' during 2004.

Table 3.9
Number of random breath tests conducted in seven Australian jurisdictions in 2004, by testing method

Jurisdiction	Static	Mobile	Total	% Mobile
South Australia	607,303	46,030	653,333	7.0
New South Wales	2,406,442[a]	658,610	3,065,052	21.5
Northern Territory	UK	UK	5,476	UK
Queensland	1,964,291[b]	814,908	2,779,199	29.3
Tasmania	99,883	365,526	465,409	78.5
Victoria	2,393,830[c]	1,264,364	3,658,194	34.6
Western Australia	UK	UK	850,562[d]	UK

[a] Total includes 200,507 tests conducted from RBT 'bus units'
[b] Total includes 250,179 tests conducted using RBT 'booze bus units'
[c] Total includes 1,463,047 tests conducted from RBT 'booze buses'
[d] Total includes 349,833 tests conducted from RBT 'booze bus units'
NB: UK = unknown

A more appropriate measure of RBT testing levels in different jurisdictions can be gained by adjusting RBT numbers for the number of drivers in each jurisdiction. However, due to difficulties associated with differences in licensing conditions across jurisdictions, it was decided that a simpler measure would be breath tests per head of population. As shown in Table 3.10, South Australia's level of RBT was comparable with that in Western Australia and New South Wales but considerably less than that in Tasmania, Victoria and Queensland.

Table 3.10
Number of random breath tests conducted in seven Australian jurisdictions in 2004, as a percentage of population

Jurisdiction	Total	Pop 2004*	% of Pop
South Australia	653,333	1,532,727	42.6
New South Wales	3,065,052	6,720,791	45.6
Northern Territory	5,476	199,384	2.7
Queensland	2,779,199	3,888,077	71.5
Tasmania	465,409	482,236	96.5
Victoria	3,658,194	4,962,970	73.7
Western Australia	850,562	1,978,079	43.0

* Source: June, 2004 data from Australian Bureau of Statistics (2005) *Population by Age and Sex: Australian States and Territories.* Catalogue No 3201.0

RBT detections

Data concerned with drink driving detections by all methods were also obtained from a number of other Australian jurisdictions as shown in Table 3.11. When population is taken into account, Tasmania had the highest detection rate and South Australia and New South Wales the lowest.

Table 3.11
Drink driving detections, by all methods, in 2004 in six Australian jurisdictions

Jurisdiction	Drink Driving Detections	% of Population
South Australia	6,058	0.40
New South Wales	26,265	0.39
Queensland	27,738	0.71
Tasmania	3,979	0.83
Victoria	27,546*	0.56
Western Australia	11,968*	0.61

* Does not include detections following a crash, RBT detections only

Note that the best indicator of levels of drink driving in the community, and thus of the effectiveness of RBT as a deterrent, is a roadside survey independent of enforcement activity. Unfortunately, no such surveys have been conducted in South Australia since 1997.

3.2.3 Summary of drink driving enforcement in South Australia

At the time of writing, only complete drink driving enforcement data to the end of 2004 were available. Overall, in 2004 the total number of detections in South Australia was the highest for all years since the year 2000. However, South Australia had one of the lowest rates of testing per head of population (43%), the lowest proportion of tests conducted using mobile methods (7%), and the second lowest drink driving detection rate (0.40% of the population) of the six jurisdictions for which data were available. The extent to which the removal of "prescribed periods" on mobile RBT in South Australia has addressed this situation is unknown. To be on par with other jurisdictions in Australia, South Australia would need to increase its level of testing and increase the proportion of tests conducted using mobile RBT.

3.3 Police drink driving enforcement practices in South Australia (based on interviews with SAPOL)

This section describes the current range of drink driving enforcement activities undertaken by police in South Australia (SAPOL), and any issues related to these activities that might influence its effectiveness. This information was collected to understand the current situation with respect to drink driving enforcement policies, operations, resources and strategies in South Australia. Information was gathered from interviews with six police representing Corporate Operations, Operations Support at the Service Level and two Local Service Areas (LSAs) in rural and metropolitan areas. All comments reflect the situation as discussed during November 2006.

3.3.1 Structure of SAPOL

Harrison (2001) notes that police enforcement in most Australian states is strongly regionalised. The coordination of RBT activities was decentralised in South Australia in the year 2000. Drink drive enforcement is the responsibility of 14 LSAs in South Australia of which six are located in the Adelaide metropolitan area and eight are in rural regions. A commander in each LSA has the responsibility of ensuring drink driving enforcement targets are met autonomously. Corporate support is provided by the Traffic Support Branch mainly in the form of data collation and distribution.

Each LSA is part of either the Northern or Southern Operations Section. Within each of these, a section is dedicated to traffic enforcement: the Northern or Southern Traffic Enforcement Section (TES). These Sections operate at the Service Level and have their own RBT targets, equipment, budgets and strategic planning. They can travel anywhere in the state and consist of motorcycles, marked and unmarked vehicles. Each section also has a van that can be specifically set up for RBT operations. A request can be made by LSAs to the appropriate TES to support local enforcement activity. Typically this incorporates major events such as harvest time in rural areas or local festivals.

One of the advantages of the current model of decentralisation is that LSAs must take ownership of their local drink driving enforcement and are accountable for reaching their targets. Further details regarding LSA accountability for achieving drink driving enforcement targets are discussed in Section 3.3.2. In most cases, people within the LSA are better placed to know where and when to conduct drink driving enforcement activities in their own area of operation. Cooperation between LSAs is thought to be rare and largely influenced by geography and a need to satisfy LSA assigned targets with limited resources.

Throughout any given year, the LSAs (and each TES) must support a number of Corporate Operations. These operations include enforcement activities (including drink driving, speeding, restraint use, heavy vehicles, fatigue) scheduled for various periods during the year. For example, drink driving might be the targeted behaviour during November. The road safety enforcement calendars are produced in conjunction with the Motor Accident Commission and the Government of South Australia. Each LSA must then set a roster so that these enforcement activities can be performed.

A Driver Drug Testing Group was centrally formed within the Traffic Support Branch to pilot the implementation of roadside driver drug testing and commenced 1 July 2006. A traffic policing restructure was implemented in October 2006; this realigned and deployed police traffic resources in accordance with identified operational needs, revised population demographics and to complement the SAPOL Road Safety Strategy 2006-2010. This new structure has not been operating long enough for SAPOL to comment on its effectiveness. There is provision, however, for Traffic Support Branch personnel to volunteer for RBT overtime activities.

With respect to the regionalisation of enforcement activities, concerns were raised in the literature (Harrison et al. 2003) that general duties police may not be trained adequately or

understand the importance of drink driving enforcement. SAPOL did not believe this was a concern as all new recruits to the police force from the Academy receive practical RBT training. This training covers all aspects of RBT operations from occupational health and safety to equipment use. The Traffic Training and Promotion Section also conduct regular RBT training both at the Traffic Support Branch and by visiting the LSAs.

While many LSAs have to rely on general duties police to provide traffic enforcement, some have specially assigned police dedicated to traffic enforcement (e.g. highway patrol in the South East). It was pointed out that there are some attractions to traffic policing as there is minimal supervision, travel is a major part of the job, there are opportunities to earn extra money through overtime and the image of traffic police is improving. As SAPOL is such a large organisation, motivation and belief in the efficacy of traffic enforcement varies, however anecdotally the culture and profile of traffic policing was thought to be improving throughout the organisation.

3.3.2 Enforcement operations

Current drink driving enforcement operations in South Australia are examined in terms of target and actual enforcement levels, equipment and resources available, location and times of enforcement, types of enforcement used, and any issues that influence enforcement operations.

Targets and enforcement levels

A corporate testing target of 600,000 breath tests per year in South Australia was adopted from 1999 to 2005. In 2006, this testing target was increased to 612,000 tests. The target number of tests was set to primarily accomplish a testing ratio of one out of every two licensed drivers in South Australia per year. If this target is achieved, external Federal Government funding is obtained and made available to the LSAs for overtime payments for RBT activities (note that overtime refers to payments for work outside of a scheduled eight-hour shift). This funding provides LSAs with more resources to manage RBT activities and provides some incentive for officers to undertake additional RBT activities.

In addition to testing levels, corporate targets are also set for detection rates. In 2006, a benchmark detection rate was set at 0.5% of drivers tested by static RBT and 3.2% of drivers tested by mobile RBT.

The overall target testing and detection levels for South Australia are divided into tailored targets for each LSA based on several variables (e.g., population, number of police etc.). Since 2006, the targets are left to the discretion of the Assistant Commissioners and reviewed quarterly.

Some states in Australia have specific testing targets for each individual police officer. For example, in Victoria, each officer is expected to complete 30 minutes of RBT every shift. There are no targets set on an individual level in South Australia, although individual LSA's may have certain expectations. For example, highway patrols in the South East are expected to perform one hour of drink driving enforcement every shift (approximately 1000 tests per week). However, this often does not occur because officers are called out to other duties.

LSA accountability

There are several ways that the LSAs are held accountable for achieving targets:

- Regular reporting to their Assistant Commissioners
- Regular meetings within the hierarchy
- Monthly meetings between the Northern and Southern Operations Sections and the LSAs within their section

- Annual LSA forum to review performance (attendees include Assistant Commissioners and two or three LSAs from similar area)
- A Northern and Southern Operations traffic forum is held annually for all traffic managers.
- The distribution of a progress report that reveals how the LSAs are tracking in relation to their targets and other LSAs

Note that these meetings are not specific to drink driving enforcement and cover a number of enforcement issues. Therefore, there is plenty of opportunity for interaction between LSAs.

An internal monthly RBT progress report is distributed to all LSAs indicating their progress for the year to date including number of tests conducted, detection rates, and general RBT information. This report forms a transparent process that has lead to rivalry between LSAs to 'outperform' each other.

Equipment and resources

Most general patrol and traffic vehicles are equipped with a preliminary breath testing device (1026 available in South Australia in November 2006). Drivers who register a blood alcohol level over the prescribed limit on the screening test are required to submit to a further test on more accurate apparatus to determine an 'evidentiary' BAC level to be used in prosecution. This must be completed within two hours of the last known time of driving. An issue raised was that a positive detection would mean that an officer would be tied up for some considerable time (in the order of two hours) processing the motorist. Therefore with smaller operations, multiple positive detections could force the operation to temporarily shut down.

At static RBT sites in South Australia, evidentiary testing is either conducted in special vans (a smaller version of the traditional booze buses) or at a suitably equipped police station. Drivers testing over the legal limit with mobile RBT are usually driven to the nearest police station or static RBT site. All evidentiary equipment is portable and can be used in (plugged into a cigarette lighter) or out of a vehicle. Those found to be over the prescribed limit in the evidentiary test are officially recorded as having exceeded the prescribed concentration of alcohol (PCA). There were 99 evidentiary breath testing instruments available for use in South Australia in November 2006.

Preliminary breath testers are calibrated every six months and evidentiary equipment is serviced every six months and calibrated once per year.

The number of preliminary and evidentiary breath testing devices available to police in November 2006 by LSA in South Australia is shown in Table 3.12. Some LSA's have indicated that they need more evidentiary equipment.

In regional locations, cooperative policy models are used whereby police stations share breath testing resources. However, police commented that in more remote rural areas, distance and resources (i.e., number of staff) make co-operative operations between LSAs difficult.

Table 3.12
Distribution of breath testing equipment by LSA, November 2006

LSA*	Population [a]	Square Kilometres [a]	Number of Alco-testers	Number of Evidentiary Testers
Metropolitan				
Adelaide	141,992	155	82	5
Elizabeth	217,051	1,767	77	5
Holden Hill	187,133	495	66	5
Port Adelaide	157,985	122	51	4
South Coast	143,514	6,592	60	6
Sturt	307,802	342	70	4
Rural				
Barossa Yorke	67,208	15,699	55	12
Far North	27,771	669,967	63	10
Hills Murray	81,071	17,202	63	6
Mid West	26,178	25,267	51	4
North East	34,566	60,337	61	7
Riverland	38,784	32,109	47	8
South East	63,040	21,328	73	8
West Coast	30,155	133,942	45	5
Other	-	-	162	10
Total			1026	99

* LSAs in the Northern Command Region shown in bold; others are in the Southern Command Region

[a] Data source: Calculated from ABS Regional Population Growth 2003-04 Australia and New Zealand, Cat No. 3218.0-25, March 2005. Estimated resident population by LGA as at 30/6/2004.

Locations and times

Decisions about the timing and location of enforcement activities in South Australia are made at the local level. Individual LSAs use their own local intelligence and experience to select static RBT sites because it is felt that they know where the high volume, high detection and high alcohol-related crash locations are. Basic crash statistics and other related information is available from central Traffic Intelligence on an internal system. LSA's can also request detailed information including statistics and maps. LSA's report that this corporate level support is useful and responses to such queries are usually very prompt (i.e., same day of request).

South Australia was one of three Australian states commended by Harrison et al. (2003) for having the best-developed data systems for selecting enforcement times and locations, with access to the data available at the local level. Nevertheless, SAPOL stated they would welcome any additional means to achieve the right balance in enforcement times and locations to discourage and reduce drink driving levels.

Types of enforcement

The two main types of RBT enforcement conducted in South Australia are stationary or static RBT and mobile RBT. Stationary RBT is conducted in a fixed area that is static for its entire duration. Passing traffic at stationary RBT sites are pulled over but legislation requires that vehicles are moved through in a timely manner (see The Road Traffic Act 1961 Section 47DA). As mentioned previously, evidentiary equipment may be provided in general purpose vans at static RBT sites.

The other main type of drink driving enforcement is mobile RBT. Since June 2005, mobile RBT is no longer restricted to 'prescribed periods' in South Australia. Police can now stop any driver at any location at any time and request a breath test. Moreover, as there is no legislation imposing time restraints once a driver is pulled over, police may conduct other checks on the driver (i.e., licence, registration) and vehicle. If a breath test is positive, the driver is taken to the closest evidentiary equipment (i.e., police station or specialist van).

There is consensus among SAPOL that mobile RBT is the most effective means of detecting drink drivers. However, police expressed concern that competing policing priorities (i.e. crime) in LSAs often take police personnel away from mobile RBT operations. The majority of RBT testing is conducted using the static method. Static testing is highly visible and used mainly for general deterrence, but is often used in combination with mobile patrol cars. Police from rural LSA's commented that fewer detections are achieved with static RBT, often because drivers are familiar with static sites or find out quickly where they are located by word of mouth. For these reasons, police often need to move rural RBT sites every hour.

Large targeted enforcement operations in which specific problem areas are saturated for a short period of time are also conducted intermittently in South Australia as part of the overall enforcement strategy. An example of this strategy is the cordoning of the Adelaide city centre; RBT is conducted on all roads surrounding the city. Metropolitan and rural LSA's report a strategy of targeting licensed venues, particularly late night establishments frequented by people aged 18 to 40 years. Police report a good rapport with such establishments and no mention was made of resistance to police enforcement activity.

The proportion of covert and overt, random and targeted (i.e. around hotels, city centre), and stationary and mobile RBT operations is at the discretion of the individual LSA. In practice, a combination of all four approaches is required in order to meet testing and detection targets.

Occupational health and safety issues

SAPOL occupational health and safety policies were developed to ensure measures are undertaken during RBT operations to make conditions safe for police. Such measures include reducing speeds in high-speed zones, using traffic cones around testing areas and wearing highly visible safety vests. A risk analysis is also conducted before RBT operations and police are briefed prior to the operation.

Occupational health and safety policies can also place constraints on enforcement operations, particularly static testing. For example, adverse weather conditions such as rain or extreme heat (above a threshold temperature) are deemed unsafe for police to conduct static testing. Note that there are no maximum temperature constraints on using the equipment. Sometimes mobile RBT enforcement is employed in lieu of static RBT to overcome these issues. For example, if it is raining and too dangerous to pull traffic into a static site, mobile RBT is used.

Occupational health and safety issues also influence the total number of hours police can work. Police may work for a maximum period of 12 hours. Indeed, some RBT operations run from 6pm to 6am, which translates into an eight-hour shift with an extra four hours of overtime. Alternatively, two separate shifts could cover such an RBT operation.

3.3.3 Strategic management and support

Data management (intelligence led enforcement)

Each LSA in South Australia collects data on local RBT activities. With respect to the number of breath tests, collection techniques vary between LSAs. Some LSAs use a counting device while others simply count the number of discarded mouthpieces. No auditing of the actual number of breath tests conducted is undertaken. Police commented that these systems rely on honesty and are subject to inaccuracies.

There is conflicting evidence as to whether electronic data from the breath testers can be downloaded. Nevertheless, downloading is not performed at the LSA or corporate level at present. There are several advantages of data-logging preliminary breath tests. Downloaded data may be useful in planning future targeted enforcement activities and would allow testing rates and times to be more accurately recorded.

Data from RBT operations is entered by each LSA onto the central 'Traffic Online' mainframe and includes details of the following:

- Time activity commenced
- Time activity concluded
- Number of operators
- Number of breath tests performed
- Number of positive tests (between 0.05 and 0.08; between 0.08 and 0.15; greater than 0.15)
- Method of RBT employed (i.e., static or mobile)

If any concerning trends are noticed in the data (e.g. a large number of high readings), the LSA will be informed by the Traffic Support Branch. However, in most cases the LSA is already aware of such issues.

Police have indicated that data entry systems are time consuming and difficult to work with. Officers must enter drink driving enforcement information into four systems: offender reports, journal, traffic online and the justice information system. Consequently, much information is duplicated and the data entry becomes time consuming and monotonous. Once in the system, some report that it is also difficult to extract the data.

Allocation of resources

Typical RBT operations in LSA's involve two or three officers at a stationary site and two officers in patrol cars (i.e. mobile). Police commented that having more than eight officers at stationary RBT sites could be problematic because a greater number of drivers are tested and, consequently, vehicles get banked up. If resources are split (i.e. two teams of four) then two locations or two different directions of travel can be targeted. RBT operations can also be limited by the number of alco-testers available.

Drink driving enforcement is generally conducted during evening shifts up to 2am and often beyond, depending on resources. The Northern and Southern Traffic Enforcement Sections often assist other LSAs in conducted in late night/early morning RBT activities and have budgets set aside for overnight accommodation in country areas (stay often lasts 2-3 days).

Some police commented that most drink driving detections occur after midnight and they expressed interest in conducting more RBT at this time. However, they acknowledged that at night there are fewer personnel rostered on duty because it is the most expensive time to staff and police are often called away from RBT operations to attend other policing issues. The traffic policing restructure in October 2006 resulted in realignment of traffic resources. A centrally based driver testing resource was formed in July 2006. Police commented that because there was only a single dedicated unit, it could only assist in one LSA at a time.

SAPOL stated that South Australia is leading other Australian states in some areas of RBT operations. For example, it was known that in another jurisdiction, police usually complete RBT activities around 2am while in South Australia officers often work overtime so testing can conclude up to 6am, into the daylight hours.

Community and media support

There are two main corporate RBT operations planned each year: Santa Safe consisting of two RBT components in December and January, and Operation Consequences consisting of four RBT components in August, September, December and February. A total of 12 planned enforcement activities exist annually but the others do not have RBT components.

Public launches are held before these two drink driving enforcement operations commence but the exact details about the time and locations of RBT activities are not given. SAPOL does not do any other advertising or promotions for RBT activities apart from these public launches.

Individual LSA's reported that they feel drink driving enforcement activities receive good community and media support. They report a good rapport with the local media who are interested in reporting road safety issues. Unpaid media, particularly local radio and newspapers, are frequently used by some LSAs to keep road safety issues in peoples minds and to back up enforcement activities. Other LSAs report they do not actively seek the media but are happy to provide details about RBT activities when approached.

Police also work with the community to deter drink drivers, rather than detect. For example, a community program and driver action group operate in one LSA. These programs encourage drinkers not to get in a car and drive and involve police presence in licensed venues and around their car parks.

3.4 Drink driving publicity in South Australia

Accompanying mass media publicity campaigns and public education are thought to increase the deterrent value of enforcement activities (Homel, 1990). An interview was held with the Coordinator, Marketing & Communications of the Department for Transport Energy and Infrastructure (DTEI) to ascertain the role of publicity and public education in South Australia in relation to drink driving. It should be noted that since the interview, responsibility for the coordination and creation of State Government road safety mass media has been passed onto the Motor Accident Commission (MAC). It is thought however, that the basic underlying principles and situations reported in the following sections will not change significantly in the short term.

Funding

Most of the funding for mass media is provided from the Motor Accident Commission (MAC) and the current budget is $2 million. This has remained fixed for several years. There is a three-year road safety strategy in South Australia dictating the proportion of total funds to be spent on each road safety issue. The current strategy specifies that around $400,000 must be spent on drink driving publicity. MAC contributes 78 per cent of funding of which 22 per cent ($440,000) must be matched by DTEI.

DTEI splits the budget so that approximately 30 per cent is spent on production and 70 per cent on media (placement). The other major cost is evaluation. Other budget lines can be used to supplement small scale activities (e.g. 0.05 cups for Football park).

Campaigns

In recent years, there has been minimal mass media focus on RBT enforcement in advertising. A campaign was run in 2005 to support the introduction of mobile RBT. This campaign was radio based accompanied by posters with the message that motorists could now be caught anytime, anywhere by any police vehicle. There were no television advertisements aired in relation to this campaign.

Ambient advertising has been undertaken with the following elements:

- Targeted venues and events – Clipsal motor race, WOMAD, soccer, cricket etc
- Cups, stickers for toilets etc
- Different ways of getting to the younger drinkers

The target demographic have been 16-30 year olds with the emphasis on getting the message to this group before they develop bad behaviours.

Traditionally, a new campaign has been produced each year for a given road safety topic but this is no longer the case. Campaigns are now constantly refined over the longer term with the aim of being consistent and achieving good reach over time. Advertisements are also sourced from interstate if their content is considered suitable and effective for South Australia. At the time of writing, the 2006/07 program was to incorporate a general anti-drink drive message.

Campaign development:

Campaign development is performed using focus groups composed of the target audience. In relation to drink driving, these have revealed that for 16 to 30 year olds:

- People feel that others are being caught just above the 0.05 level
- At this level, such people feel alright and cannot tell that they are drunk
- At this level, such people are not intentionally drink driving, unlike at higher BAC levels
- and as such they are unlucky for being caught

At present, DTEI do not run threat appeal advertisements on the likelihood of being caught because focus groups indicate:

- the perception of the chance of being pulled over and tested, especially late at night is low
- there is a belief that police resources are limited
- participants do not associate the advertising with observed high levels of enforcement

Campaign tracking

Currently, two companies are used for campaign tracking: one performs the pre-campaign and the other post-campaign tracking. It has been suggested that the use of one company would be more appropriate for consistency. The pre- and post-campaign tracking typically consists of approximately 600 people. Longitudinal tracking is performed monthly and monitors recall and consistency over time. Self reported behaviours are also tracked and drink driving detections are examined.

Coordination with police enforcement

Mass media is used to support statewide SAPOL campaigns. DTEI also offers support with press releases and provides publicity materials for LSAs such as posters for targeted venues.

SAPOL conduct their own press releases and generally obtain good coverage in the media. Anecdotally, this seems to have a positive effect on road safety initiatives; tracking has shown that drink driving awareness hit a peak during a restraint use campaign. This

supports the theory that specific road safety messages have an impact across several road safety areas.

There is much scope to improve operational coordination between mass media and enforcement activity and this has been lacking in the past. It is known, however, that attempts are underway to resolve this issue.

Issues/concerns

Several issues and concerns were raised in relation to resources available for the development of mass media campaigns. Current funding does not allow for meaningful development and tracking with only five focus groups with six to seven participants to be conducted annually. There is a desire to conduct more and larger focus groups to make findings more robust. Longitudinal tracking sample sizes could also be increased. In order to achieve current sample sizes, questions are often omitted to shorten the interview process. There is also a desire to conduct more testing of concepts once an advertisement has been produced. At present, only storyboards are tested.

4 Discussion

An overall snapshot of drink driving enforcement operations in South Australia has been obtained. This indicates reasonable activity by LSAs operating autonomously to meet targets set by a corporate command. The arguments for this structure are that LSAs have ownership of drink driving enforcement (i.e. it becomes their problem) and they also become more accountable in terms of reaching performance targets. These targets consist of the number of overall tests performed and the proportion of detections.

Previous research has voiced concern that regionalised operations are not under as much scrutiny as if there were close central control. Evidence suggests that the performance targets are effective in engaging LSAs to undertake drink driving enforcement. The quality and composition of this enforcement is another issue for debate but there appears to be no rigid guidelines for success in the literature. The high number of tests required is conducive to so-called "dumb testing". This involves the establishment of static RBT on high volume roads to achieve the targets or make up backlogs. By nature, such activity is of high profile and highly visible and not inconsistent with recommended approaches. The specification of detection rates in addition to number of overall tests should be adhered to as it implies some degree of quality in the testing.

Other researchers (Harrison et al, 2003) suggest that targets for enforcement activities should be time-based (number of person hours) and should also use alcohol related crash outcomes. While alcohol related crash outcomes should be monitored, they can be difficult to interpret especially in the context of individual interventions. The use of fatal injury crashes as an indicator, for example, should be abandoned in favour of casualty crashes.

In terms of legislation, South Australia has provisions comparable to those of other jurisdictions. The introduction of mobile RBT in the State has clearly been considered as an effective method for drink driving enforcement. Since the latter half of 2005, SAPOL activities can be compared with those of other States in this regard. In general, it appears that mobile RBT has also been used to overcome previous limitations, such as the inability to establish static RBT sites in heavy rain.

Structure and resources

It is not within the scope of this report to suggest an organisational structure for SAPOL or advise the way in which the organisation should be run. However, this clearly has a significant influence on the way in which drink driving enforcement is approached in the State. The organisational structure must also be viewed in context and it was not that long ago that certain elements of traffic policing were to be disbanded permanently.

The reliance on the autonomy of LSAs has many positive and negative aspects, however, in the context of this report, most are seen as positive. An issue that cannot be meaningfully addressed is if the LSAs are properly resourced to conduct adequate levels of drink driving enforcement. A comparison with other states suggests that South Australia is lagging behind the best performing states in terms of the number of overall tests and detections performed. The lack of mobile RBT in recent years may be a significant contributor to this situation. Data from late 2005 and 2006 will be needed to see if this situation has changed. This would likely have much improved detection rates but only a modest increase in the number of overall tests. A further review of the equipment possessed by police forces in other states would also assist in the interpretation of the circumstances.

The maintenance of the two TES is also seen as beneficial and maintains a necessary higher profile focus on traffic enforcement. However their individual impact is difficult to assess and the extent to which they can bolster LSA activity over the whole state given current resources must be limited.

The assignment of dedicated traffic police to the LSAs is also seen as a positive influence provided that there are adequate resources to permit these people to remain focused on traffic enforcement duties.

The current drink drive enforcement model relies heavily on the resources allocated to the individual LSAs and Northern and Southern TES. What is not considered by this review are the resources available to SAPOL when compared to the Police organisations in other states. While alco-testers appear to be well distributed, the number of personnel and hours dedicated to drink drive enforcement activity has yet to be compared to practices interstate. The effectiveness of the current de-centralised structure relies heavily on the proper resourcing of the LSAs to be able to focus on drink drive enforcement activities without distraction. The same applies to the Northern and Southern Traffic Enforcement Sections (TES) who have to service the entire state and provide support to LSAs upon request.

Knowledge of RBT operations appears to be well served by training provided to fresh graduates at the Academy and also by the Traffic Support Branch on an ongoing basis. The number of alco-testers appears to be sufficient but some LSA's indicated they need more evidentiary equipment, particularly in remote rural areas where it is difficult to test drivers on evidentiary equipment within the two hour timeframe.

Intelligence led enforcement / strategic data management

The Traffic Support Branch provides timely information to LSAs, however the task of recording and retrieving data appears to be anything but streamlined. The difficulty of entering sometimes duplicate data into the various computer systems was highlighted on more than one occasion.

Currently, the number of breath tests in South Australia is recorded by LSAs who either count discarded mouthpieces or use a counting device. There appears to be confusion as to whether electronic data from breath testers can be downloaded. Many jurisdictions in Australia either have, or are moving towards the data logging of preliminary breath tests. There would be significant benefits if data were to be recorded from alco-testers in the field and downloaded. SAPOL could increase its intelligence in relation to how much drink drive enforcement was being conducted and the times at which this was occurring. Such information would be invaluable to the planning of future enforcement activities. However, this would require some administration and cultural issues to be overcome.

When deploying RBT resources, it appears that best practice involves assimilating information from traffic intelligence systems with local knowledge while being sensitive to local conditions. LSAs use their own intelligence and experience to select RBT times and locations and have access to relevant data at the local level.

RBT operations

The literature indicated that the optimal strategy for RBT operations is using highly visible methods in the early part of the evening (i.e. 6 to 10pm) so that potential drink drivers see drink driving enforcement on their way to drinking venues. This may deter drink driving by influencing subsequent alcohol consumption or the decision to drive. To detect actual drink drivers, RBT is also needed later in the evening (after midnight) at times when the highest drink drive rates occur. The precise proportion of each enforcement method needed to maintain an optimal balance is unknown.

South Australian drink driving enforcement activities in 2004 contained highly visible static RBT prevalent during daylight hours and also from 8pm to 10pm. Mobile RBT (during prescribed periods) was primarily conducted from 6pm until 2am but was over-represented from midnight to 4am. Mobile detection rates were highest from midnight until 6am. Detection rates for both methods were highest on weekends when drink driving is known to be most prevalent.

Homel's Deterrence Model supports highly visible RBT, as this is important in increasing the perceived risk of detection. Decision making models suggest a greater emphasis should be placed on detection because exposure to apprehension and punishment may reduce the likelihood that drink driving behaviour is considered appropriate when making the decision whether to drive after consuming alcohol (Harrison, 2001). Thus, highly visible, static RBT should be complimented by covert mobile operations.

In South Australia, the majority of RBT is conducted using the static method (93% in 2004). Static testing is highly visible and used mainly for general deterrence, but is often used in combination with mobile patrol cars to apprehend drivers using back streets to avoid RBT sites. For specific deterrence, it is important to apprehend a large proportion of drink drivers. Data in this report indicate that detection rates were highest in Australian states where there were higher levels of testing and a higher proportion of tests conducted using mobile testing methods. Note that no evaluations of *mobile RBT* were available in the literature.

To be on par with other jurisdictions in Australia, South Australia could justifiably increase its level of RBT and increase the proportion of tests conducted using mobile RBT. Data from 2005 and 2006 would need to be evaluated to know what increase would be reasonable.

Rural enforcement issues

Static RBT based primarily on deterrence is unlikely to have a great effect on rural drivers. Therefore, detection of drink drivers would be the most useful strategy in such communities and is best achieved through unpredictable, smaller, covert mobile operations. Covert mobile operations are valuable in that they provide a solution to the limited police personnel available in rural regions and the 'grapevine effect' known to undermine the value of a highly visible static RBT station. However, covert operations should complement overt testing methods and all enforcement strategies should consider local factors.

Publicity / media campaigns

There has been very little mass media content focused on drink driving enforcement in the past few years. Current feedback amongst a small sample of 16 to 30 year olds suggests that the perception of being caught if engaging in drink driving behaviour is small. More robust testing is needed to develop a coordinated mass media campaign that compliments police enforcement. The coordination of enforcement activity with mass media publicity should be given a high priority.

5 Conclusions

A snapshot of drink driving enforcement operations in South Australia was obtained via interviews with personnel from varying levels of the SAPOL hierarchy. This indicates reasonable activity by LSAs operating autonomously to meet targets set by a corporate command. The rationale of giving ownership of drink driving enforcement to the LSAs appears to be valid based on the interviews conducted. It is impossible to comment if all LSAs are taking their drink driving enforcement seriously however corporate policies are in place to try to ensure that LSAs are held accountable for their performances.

The introduction of mobile RBT operations outside of prescribed periods in 2005 has clearly enhanced the ability of the police to perform drink drive enforcement and bring South Australia in line with national practices.

The mix of enforcement approaches is left to the discretion of the LSA commanders, however, the high number of tests required lends itself more towards testing for quantity rather than quality. This is not inconsistent with the general deterrence principle of RBT, however a degree of specific deterrence also needs to be delivered with detections. It is understood that proportion of detections by mobile and static RBT is also a performance measure and, if adhered to, should deliver some element of quality into the testing.

The review has found that the following items should be considered to further enhance drink driving enforcement in South Australia:

- The combination of static RBT with mobile RBT is viewed as particularly effective and should be conducted whenever resources allow
- Mobile RBT is considered the most effective form of drink driving enforcement in rural areas
- Ensure that mobile RBT does not become the sole means of enforcement at the expense of general deterrence (unlikely given current testing targets)
- National and international evidence suggests that static and mobile RBT, as conducted in Australia, continues to be the most effective method for drink driving enforcement
- The literature suggests that time based allocations for drink driving enforcement should also be specified; ideally alcohol related crash data should also be used but interpretation can be difficult, particularly in terms of individual interventions
- To alter motorists behaviour for the rest of the evening and avoiding drink driving episodes altogether, RBT should continue to operate earlier in the evening (e.g. 6pm to 10pm) and preferably near drinking establishments
- RBT operations are also required later in the evening (eg midnight to 2am) when most drink driving occurs for general and specific deterrence
- There is scope to improve data collection and reporting systems
- It is essential that mass media campaigns are coordinated with enforcement activities
- On a per capita basis, there is scope for South Australia to increase its testing and detections to be more in line with national practices

It should be noted that these conclusions are made based on data available to 2004 when mobile RBT had been introduced for prescribed periods only. Further analysis of data following the lifting of restrictions on mobile RBT operations from late 2005 and 2006 would be necessary to ensure that the current situation was properly interpreted. This would likely

result in much improved detection rates but only a modest increase in the number of overall tests.

What is not considered by this review are the resources available to SAPOL when compared to the Police organisations in other states due to the difficulty in obtaining this type of information. While alco-testers appear to be well distributed, the number of personnel and hours dedicated to drink drive enforcement activity has yet to be compared to practices interstate. The effectiveness of the current de-centralised structure relies heavily on the proper resourcing of the LSAs to be able to focus on drink drive enforcement activities without distraction. The same applies to the Northern and Southern Traffic Enforcement Sections who have to service the entire state and provide support to LSAs upon request.

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Appendix A - Legislation comparison

Comparison of drink driving related legislation for general drivers between South Australia and other Australian jurisdictions, as of June 2007 (excludes drivers of a prescribed vehicle, see Road Traffic Act 1961 (SA) s47A(1) and drivers with a learner's permit or provisional licence)

	SA	NT	VIC	QLD	WA	ACT	NSW	TAS
Alcohol								
Prescribed concentration of alcohol (PCA)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Alcohol concentration categories for an offence against PCA	Cat 1: 0.05 - 0.08 Cat 2: <0.08 - 0.15 Cat 3: > 0.15	L1: 0.05 - 0.08 L2: 0.08 - 0.15 L3: > 0.15	0.05 - 0.07 0.08 - 0.14 > 0.15	General limit: 0.05 High limit: > 0.15	0.05 > 0.08	L1: 0.02-0.05 L2: 0.05-0.08 L3: 0.08-0.15 L4: > 0.15	Low range: 0.05 - 0.07 Mid range: 0.08 - 0.14 High range: > 0.15	L1: 0.05 - 0.1 L2: 0.1 - 0.15 L3: > 0.15
Driving under influence (alcohol or drugs)	Must not drive a vehicle/attempt to put vehicle in motion while: under the influence of intoxicating liquor or drugs as to be incapable of exercising effective control of vehicle Effective control definition - Use of mental or physical faculty of person is lost or impaired	√	√	√	√ 0.15% - (See s63(5))	√	√	√
Definition of first or subsequent offence	Previous offence within prescribed period			Committed offence under same section within 5 years	Committed a previous offence under Act	Committed a relevant offence within 5 years		0.00 alcohol while driving if committed 3 offences within 10 yrs

	SA	NT	VIC	QLD	WA	ACT	NSW	TAS
Driving while having PCA in blood	Person must not drive motor vehicle or attempt to put motor vehicle in motion	√	√	√	√ Also an offence to drive with 0.05 - 0.08 PCA	√	√	√
Under 18 yo, unlicensed, or on learners permit	0.00	0.00	0.00	0.00	Offence to drive with 0.02% BAC	0.02	0.00	0.00
Consuming liquor in the car								Driver nor passengers can consume liquor while car in motion
Compulsory blood test	If person over 14 yo suffers injury in motor vehicle accident and attends hospital re injuries - compulsory blood test must be taken (same for any deceased persons over 14).	√√ 15 yo	√ 15 yo			√ 15 yo	√ 15 yo	
Drugs								
Prescribed drugs present in blood	Must not drive when a prescribed drug is present in oral fluid or blood		Prescribed concentration of drugs				Prescribed illicit drug (and morphine / cocaine)	Prescribed illicit drug
Drugs defence	*Defendant proves:* * did not knowingly consume prescribed drug * unaware that drug was taken unlawfully		*did not know drug would impair driving *took upon advice (written or oral)		*taken as prescribed by medical practitioner *not aware that drugs likely to render incapable of proper control		*consumer for medicinal purposes * prescribed by medical practitioner	*obtained and administered in accordance with Poisons Act 1971

	SA	NT	VIC	QLD	WA	ACT	NSW	TAS
Breath testing etc								
Driver testing stations	No restrictions (time or location) Must be set up so vehicles can stop safely If set up in vicinity of event, specifically for that event, must be sufficient advertising so public are aware of testing as they arrive at event		May set up prelim testing station on or in vicinity of highway Must be identifiable by signs, lights etc Officer must be in uniform					
Police may require alcotest or breath analysis Random breath testing	Person may be submitted to test if police believe: driving or been driving, or attempting to drive Any officer can request driver to pull over - do not have to be performing duties at driver testing station Police officer can direct any person driving a motor vehicle to stop the vehicle and have an alcotest or breath analysis Must be in uniform Must be in an identifiable police vehicle	Reasonable cause to suspect the person has driven car under influence and/or been in accident Officer can ask driver to stop vehicle and have test near where requirement was made	Person may be submitted to test if police believe: driving or been driving or, been in accident within last 3 hrs	Person may be submitted to test if officer believes: driving, been driving, about to drive or been in accident	An officer can request any driver (or person suspected of driving) to submit to preliminary breath test Must be authorised to carry out test Person can request blood test by med practitioner instead of breath test	Reasonable cause to suspect the person has driven car in public place, has been in accident or committed offence of culpable driving Officer can request or signal driver to stop	Reasonable cause to believe person was driving, occupying drivers seat and attempting to drive Can test for both alcohol and drugs simultaneously	May request any driver to pull over and have breath test (regardless of whether or not the officer suspects driver consumed liquor) Can request blood analysis if driver's behaviour / conduct suggests alcohol in system
Refusal to comply with breath testing, blood test is an offence	Only possible to refuse if physical or medical condition (blood test required)	√	√	√	√	√ (religious beliefs also a defence to refusing test)	√	√

	SA	NT	VIC	QLD	WA	ACT	NSW	TAS
Police may require drug screening test Oral fluid analysis or blood test	May be required to submit drug screening test (if been submitted to alcotest) If test is positive may be required to have oral fluid analysis or blood test		May be required to submit to test if officer believes driving under influence or with PCA in blood	Only if external signs indicate affected by alcohol or drug but alcohol level (after initial testing) does not explain behaviour (blood or urine)	Blood test can be requested if driver behaviour not entirely result of alcohol / if officer believes drugs in system	Blood test can be requested if driver behaviour not entirely result of alcohol / if officer believes drugs in system	Reasonable cause to believe person was driving, occupying drivers seat and attempting to drive	May request any driver to pull over and have oral fluid test Can request oral fluid test if driver's behaviour / conduct suggests drugs in system
Refusal to comply with drug screening test and/or urine is an offence	Only possible if physical or medical condition (blood test required)		√	√ (blood test)	√	√	√	√
Direction to leave vehicle	Police officer can direct driver to leave vehicle or not enter vehicle until permitted					Officer can take charge and remove vehicle	Officer can take charge and remove vehicle	Police officer can impound car
Immediate licence disqualification or suspension	Can occur if Category 2 or 3 offence, if driver refuses breath analysis or blood test Period of disqualification determined by the court	√ √	√	√ √		√	√	

	SA	NT	VIC	QLD	WA	ACT	NSW	TAS
Offenders to attend lectures	Person charged with first/second offence but not convicted by court - attend a lecture within 6 months		Driver education program required for offenders under 25 yo	√				√ (if held licence under 12 mths and commits offence)
Alcohol Interlock Scheme	√		√			√**	√*	√**

* Not in same Act as other drink driving provisions - Road Transport (Driver Licensing) Act 1998

** Mentioned briefly but no provisions in place to enforce:
TAS - Vehicle and Traffic (Driver Licensing and Vehicle Registration) Regulations 2000
ACT - Road Transport (Driver Licensing) Regulation 2000

Appendix B - Penalty comparison

Comparison of penalties for drink driving related offences for general drivers as of June 2007 (excludes drivers of a prescribed vehicle, see Road Traffic Act 1961 (SA) s47A(1) and drivers with a learner's permit or provisional licence)

Note that all states other than SA list their pecuniary penalties in 'penalty units' as opposed to monetary amounts:

NT Penalty Unit Act ($110 - current at 5 Aug 2002)
QLD Penalties & Sentencing Act 1992 ($75 - at 30 April 2007)
ACT Legislation Act 2001 ($100 - at 12 April 2007)
WA Road Traffic Act 1974 ($50 - at 10 March 1996)
TAS Penalty Units & Other Penalties Act 1987 ($100 - at 6 June 2007)
NSW Crimes (Sentencing Procedure) Act 1999 ($110 - at 1 March 2005)
VIC Monetary Units Act 2004 / Victorian Government Gazettes ($110.12 - at 27 Feb 2007)

Notes for Table Overleaf:

* SA 0.00
* NT 0.00 - under 18, unlicenced, learners permit, probationary, commercial vehicle
* WA 0.02 - probationary licence holder
* ACT 0.02 - learners or probationary licence holder, suspended licence etc
* QLD 0.00 - probationary or learners permit / restricted licence
* TAS 0.00 - under 18, unclicensed, learner or probationary
* NSW 0.00 - learners or probationary licence
* VIC 0.00 - learners or probationary licence

** TAS - only urine test
** NSW - also includes sobriety assessment

Offence	SA			NT			WA			ACT			QLD			TAS			NSW			VIC		
	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)	Fine ($)	Imprisonment (months)	Disqualification (months)
Driving under the influence - drugs/alcohol																								
First offence	700-1200	or 3	12	1100	or 12	6	800-2500		6				2100	or 9	6	500-3000	or 12	12-36	2200	and/or 9	12	2753	or 3	
Second offence	1500-2500	or 6	36	2200	or 12	12	1500-3500	or 9	24	3000		36	4500	or 18	12	1000-6000	or 24	24-72	3300	and/or 12	36	13214.4	or 12	
Subsequent offence							2000-5000	or 18	Perm					18	24						60	19821.6	or 18	
Driving while intoxicated										5000		36												
Driving with prescribed conc of alcohol in blood																								
First offence:																								
0.05-0.06							200																	
0.06-0.07	700			550	or 3		200			500									1100		6			
0.07-0.08							200									200-1000	or 3	3-12						6
0.08-0.09							400-1500		3															
0.09-0.10							500-1500		3															
0.10-0.11							500-1500		4				1050	or 3										10
0.11-0.12	500-900		6	825	or 6	6	600-1500		4	1000	and/or 6	12							2200	and/or 9	12			11
0.12-0.13							600-1500		5							400-2000	or 6	6-18						12
0.13-0.14							700-1500		5															13
0.14-0.15							700-1500		6															14
0.15-0.16																						1321.44		15
0.16-0.17																								16
0.17-0.18																								17
0.18-0.19																								18
0.19-0.20	700-1200		12	1100	or 12	12	700-1500		6	1500	and/or 9	36	2100	or 9		500-3000	or 12	12-36	3300	and/or 18	36			19
0.20-0.21																								20
0.21-0.22																								21
0.22-0.23																								22
0.23-0.24																								23
0.24+																								24
Second offence:																								
0.05-0.06							250-500		3															
0.06-0.07	700		3	825	or 6		300-500		3	1000		12							2200		12			12
0.07-0.08							350-500		3							400-2000	or 6	6-24						14
0.08-0.09							800-1500		6															16
0.09-0.10							800-1500		6				1500	or 6								6607.2	or 6	18
0.10-0.11							1000-1500		6															20
0.11-0.12	700-1200		12	2200	or 12	12	1000-1500		7	1000	and/or 6	36							3300	and/or 12	36			22
0.12-0.13							1200-1500		8							800-4000	or 12	12-36						24
0.13-0.14							1200-1500		10															26
0.14-0.15							1200-1500		12															28
0.15-0.16																								30
0.16-0.17																								32
0.17-0.18																								34
0.18-0.19																								36
0.19-0.20	1200-2000		36	2200	or 12	18	1200-1500		12	2000	and/or 12	60	4500	or 18		1000-6000	or 24	24-72	5500	and/or 24	60	13214.4	or 12	38
0.20-0.21																								40
0.21-0.22																								42
0.22-0.23																								44
0.23-0.24																								46
0.24+																								48
Third offence:																								
0.05-0.06							250-500		3															
0.06-0.07	700		6 (or 12 for subsequent)				300-500		3															
0.07-0.08							350-500		3															
0.08-0.09							800-1500		6															
0.09-0.10							800-1500		7															
0.10-0.11							1000-1500		8				2100	or 9								13214.4	or 12	
0.11-0.12	1100-1800		24				1000-1500		9															
0.12-0.13							1200-1500		10															
0.13-0.14							1200-1500		12															
0.14-0.15							1200-1500		14															
0.15-0.16																								
0.16-0.17																								
0.17-0.18																								
0.18-0.19																								
0.19-0.20	1500-2500		36				1200-1500		14					18								19821.6	or 18	
0.20-0.21																								
0.21-0.22																								
0.22-0.23																								
0.23-0.24																								
0.24+																								
Driving with prescribed drugs in oral fluid or blood																								
First offence	500-900																		1100		6	1321.44		
Second offence	700-1200		6													200		3			12	6607.2		
Third offence	1100-1800		12																2200			13214.4		
Subsequent offence	1100-1800		24																					
Refuse breath analysis																								
First offence	700-1200		12	1100	or 12	12	800-2500		6		and/or 6					500-3000	or 12	12-36			36	1321.44		
Second offence	1500-2500		36	2200	or 12	18	1500-3500	or 9	24	3000	and/or 12		3000	or 6		1000-6000	or 24	24-72	1100		60	13214.4	or 12	
Subsequent offence							2000-5000	or 18	Perm													19821.6	or 18	
Refuse drug screening test. oral fluid test **													2100	or 9										
First offence	500-900		6										4500	or 18		500-3000	or 12	12-36			36	1321.44		
Second offence	1100-1800		24							3000				18		1000-6000	or 24	24-72	1100		60	6607.2		
Subsequent offence																						13214.4		
Refuse blood test ***																								
First offence	500-900		6	1100	or 12		800-2500		6				2100	or 9		500-3000	or 12	12-36	3300		36	1321.44		
Second offence	1100-1800		24	2200	or 12		1500-3500	or 9	24				4500	or 18		1000-6000	or 24	24-72	5500	or 18	60	13214.4	or 12	
Subsequent offence							2000-5000	or 18	Perm					18								19821.6	or 18	
Refuse compulsory blood test in hospital after accident																								
First offence	700-1200		12							3000									3300	and/or 18	36	1321.44		2
Subsequent offence	1500-2500		36																5500	and/or 24	60	13214.4	or 12	4
																						19821.6	or 18	4
Refuse to leave vehicle (instructed to do so because not fit to drive)	5000																							
Refusal to stop vehicle for breath analysis/breath test				22000	or 12														1100					
Refuse oral fluid test after arrest																								
First offence																			3300		36			
Subsequent offence																			5500	or 18	60			
Refuse breath test or blood test after arrest																								
First offence																			3300	and/or 18	36			
Subsequent offence																			5500	and/or 24	60			
Special driver* - driving with prescribed conc of alcohol																								
First offence				550	or 12	3	100-300		3	500		3	1050 / 1500	or 3 / 6		200-1000	or 3	3-12	1100		6			
Subsequent offence				1100	or 12	6				1000		12				400-2000	or 6	6-24	2200		12			6