The History of Random Breath Testing in Victoria

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ABSTRACT

In July 1976, legislation allowing Random Breath Testing (RBT) came into force in Victoria, this being the first State in Australia. Initial operations were at low levels, but more intensified operations were undertaken in Melbourne in 1978 and 1979. During the 1980s RBT progressively increased to about 500,000 tests p.a. In 1990, 13 new high visibility “booze buses” were introduced, supported by a massive publicity campaign. Police resources for RBT were also greatly increased. This enabled the number of RBT tests to be increased to above 1 million p.a. The proportion of drivers killed (and tested) whose BAC exceeded 0.05% has progressively been reduced from 50% in 1977, to about 25% in the 1990s.

Evaluation of the effect of RBT on casualties is discussed.

INTRODUCTION

In July 1976, legislation was introduced in the State of Victoria, Australia, to allow Police to undertake “random breath testing” (RBT), at appropriately signed and illuminated Preliminary Breath Testing Stations. At that time there was little evidence of the effectiveness of this general deterrent approach and considerable scepticism among some operational Police about this “obviously inefficient” method of detecting drinking drivers. The research reviewed in this paper and the success of RBT could not have been achieved without the sustained and dedicated efforts of members of the Victorian Police who carried out the RBT. Similarly, the large reduction in alcohol related crashes after 1989, also depended on major funding by the Transport Accident Commission of RBT and supporting publicity.
THE INITIAL STUDIES

In the first two years, RBT operations averaged only eight hours per week (total) in the Melbourne metropolitan area, except for two study periods of six and seven weeks in 1977 with an average of 32 hours per week. The findings of an evaluation of these 13 weeks of increased RBT were highly suggestive of an effect on alcohol involved crashes especially in the test areas and for up to two weeks after testing (Cameron, Strang and Vulcan, 1980).

During a seven week study commencing 23 October, 1978, RBT operations in Melbourne were intensified to an average of 100 hours per week using up to eight units. (Generally two buses, each with three cars operating not more than a few kilometres away.) These operations were limited to Thursday, Friday and Saturday nights and targeted to one sector of Melbourne at a time.

An evaluation found statistically significant reductions of 36% in serious casualty crashes (at least one person killed or admitted to hospital) at night (6.00 p.m. to 3.59 a.m.) in the treated sectors during the weeks of operations and for at least two weeks afterwards, when compared with similar periods in 1977. A more conservative analysis, which took into account other effects which may have been operating in 1978 and not in 1977 found a statistically significant 28% reduction (Cameron and Strang, 1982).

In these evaluations, serious casualty crashes (SCC) at night were used as a proxy for alcohol related crashes because information on the blood alcohol content (BAC) of drivers was far from complete. Furthermore an average of 46% of drivers involved in SCC at night had a BAC exceeding 0.05%, compared with 11% for daytime SCC.

Two further periods of intensified RBT confined to specific sectors of Melbourne were conducted by the Victoria Police in 1979. These involved four weeks in March/April averaging 93 operating hours per week and four periods of two weeks each separated by two weeks of no RBT spread over September to December averaging 74 hours per week. There was some increased publicity directed against drink driving during 1979.

An evaluation was undertaken which combined the results of these RBT operations with those of October-December 1978. It confirmed and extended the results of the earlier evaluations by using longer comparison periods (Cameron and Strang, 1982). Statistically significant net
reductions of 23.4% were found in SCC at night for the periods of intensified RBT and two weeks after when compared with previous years and corrected for corresponding changes in daytime SCC. While there were indications of further smaller reductions three and four weeks after RBT these were not statistically significant.

Thus it had been established that night-time serious casualty crash reductions exceeding 23% can be expected when RBT is conducted for several weeks at intensities of about 74 hours per week for urban areas not exceeding about 450 square km. These reductions can be expected to persist for at least two weeks after RBT has been conducted in an area. On the basis of approximately 30 tests per hour of RBT operation and coverage of an area of some 1,750 square km of Melbourne throughout the year, these figures represent approximately 460,000 RBT tests per year.

Figure 1 shows the annual number of RBT tests conducted in Victoria since 1977. It can be seen that despite the calculations which had established a requirement of some 460,000 tests annually, to give full year coverage for Melbourne, it was not until 1989 that the total Statewide tests exceeded this figure.

**Figure 1 Annual number of random breath tests, Victoria**

![Graph showing the annual number of random breath tests in Victoria from 1977 to 1995.](image)

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ADOPTION BY OTHER STATES

These evaluation results for RBT were provided to the Tasmanian Transport Commission, the South Australian Parliamentary Committee of Enquiry into RBT and the New South Wales Parliamentary Staysafe Committee prior to each of these making the decision to recommend introduction of RBT in their State.

When New South Wales introduced RBT in 1983, it provided adequate resources, with one million tests per annum, plus $1 million allocated for publicity. Evaluations of that program showed that similar reductions found in the Victorian experiments could be sustained throughout the year and throughout the State (Kearns and Goldsmith, 1984; Homel, et.al., 1988). The one million tests per annum represented about one in three of the licensed drivers in New South Wales. The corresponding number for Victoria would have been about 650,000 tests per annum, a figure which was not reached in Victoria until early 1990.

RESURGENCE OF RBT IN VICTORIA

The period 1983 to 1989 was one of very little progress in reducing road fatalities in Victoria, with the fatality rate fluctuating in the range of 2.70 to 3.00 deaths per 10,000 registered vehicles. By the end of August 1989, fatalities were about 18% higher than the average for the same period in the previous three years and a decision was made to increase greatly the extent and profile of RBT (as well as to introduce a major speed camera program).

The Transport Accident Commission funded the purchase of 13 new highly visible “booze buses” which were progressively introduced commencing in December 1989, resulting in almost doubling the number of RBT tests. The program was supported by a graphic and intensive publicity campaign with an expenditure of several million dollars per annum.

An evaluation found this initiative was associated with reductions in serious casualty crashes during “high alcohol” hours of the week. These hours are defined as 6.00 p.m. to 6.00 a.m. Monday to Thursday nights, 4.00 p.m. to 8.00 a.m. Friday night, 2.00 p.m. to 10 a.m. Saturday night, 4.00 p.m. to 6.00 a.m. Sunday night - where night extends into the morning hours of the following day. During these hours about 38% of SCC involve a driver with a BAC exceeding 0.05%, while the corresponding percentage during the remainder of the week is below 4% (Harrison, 1990). In Melbourne, there was a statistically significant 18%
reduction during 1990 and a non-significant 13% reduction during 1991. In country Victoria there were significant reductions of 13% and 24% during 1990 and 1991. There was also a 24% reduction in fatal crashes in Melbourne during 1990 (Cameron, Cavallo and Sullivan, 1992).

The implementation of this program and its evaluation has been described elsewhere (Cavallo and Cameron, 1992; Cameron, et.al., 1994; Maloney, 1995; Healy, 1997) and will not be further detailed here. Suffice to say that it has been maintained at high levels through each year (now more than one in two licensed driver per annum) with sustained publicity support.

LONG TERM TRENDS IN DRINK DRIVING CASUALTIES

Figure 2 shows the percentage of drivers and motorcyclists killed (and tested) with a BAC exceeding 0.05%. It can be seen that after the initial introduction of RBT in the late 1970s, a plateau was reached during the 1980s, with new much lower levels after the massive increase in RBT commencing in 1990.

Figure 2 Percentage of drivers and motorcyclists killed (and tested) with BAC exceeding 0.05%
Estimates of the numbers of drivers and motorcyclists killed with BAC exceeding 0.05% were derived by multiplying the percentages in Figure 2 by actual numbers killed. These are shown in Figure 3 together with the number of SCC in high alcohol hours, which show a similar pattern since 1983.

**Figure 3 Number of serious casualty crashes in high alcohol hours and estimated number of drivers and motorcyclists killed with BAC exceeding 0.05%**

![Graph showing number of crashes and number killed exceeding 0.05% over years]

**CONCLUSIONS**

The initial studies during 1978 and 1979 showed that intensified RBT at the rate of about 74 hours per week for an urban area not exceeding 450 square kilometres could produce substantial reductions in night-time serious casualty crashes.

Experience during the 1980s showed that if a critical threshold number of RBT is not maintained, further reductions in drink driving casualties will not be achieved.
Results since December 1990 have shown that further reductions can be achieved through the use of highly visible booze buses delivering greatly increased numbers of tests, supported by graphic publicity sustained at high levels.

RÉFÉRENCES


