

Effective Road Policing in Rural Areas: An Integrated Approach

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Biography

Dave Cliff joined New Zealand Police in 1983. He has held a range of general duties and criminal investigation roles before taking up the position of Road Policing Manager for the Southern District in early 2001. Prior to this he had experience in developing a successful rural drink drive programme and since taking up his appointed has developed numerous road policing initiatives in the areas of data collection, intelligence, partnership development, and enforcement tactics.

Abstract

Rural areas have disproportionate levels of road trauma due to the types of roads, vehicles, and driver behaviours found in farming regions. This environment also presents particular difficulties for road policing, as small numbers of officers must cover large areas and carry out enforcement action against drivers who are often known to them personally.

These types of challenges are faced by a number of New Zealand Police Districts. In one of these, the Southern District (covering the Southland and Otago regions), New Zealand Police have implemented an integrated approach to enhance road-policing activities. This approach has prioritised improved crash reporting and individual officer performance monitoring, providing a solid basis for intelligence based deployment according to risk. The latter has included focused intelligence activities on specific problem areas such as rural drink driving. Staff motivation and training strategies tailored to the rural environment have also been implemented, which has enabled the adoption of research-based enforcement tactics focusing on speeding, restraints, and intersection enforcement.

These activities have been reinforced by the development of strong external partnerships, particularly with the Land Transport Safety Authority and a positive, actively managed relationship with the media. These partnerships have provided strong ongoing support for enforcement and education activities in the Southern District.

This integrated approach has resulted in Southern District achieving the best crash reporting rates in New Zealand and significantly increased enforcement activity. Improvements in key road safety indicators such as restraint wearing, open road speeds, hospital admissions, fatal crashes and the proportion of alcohol-related crashes demonstrate the effectiveness of the initiatives that have been undertaken. The approach adopted by the Southern District can therefore be viewed as a best practice model for rural road policing with many aspects that are applicable in other contexts.

1. INTRODUCTION

This paper outlines the integrated approach to road policing adopted in the Southern Police District. Starting from the need for effective data gathering practices to provide a robust basis for intelligence driven enforcement and resource allocation, this approach prioritises the use of research based enforcement tactics tailored to the specific problems of the rural environment, a focus on the performance of individual officers, and the development of strong partnerships with the community and other agencies with an interest in road safety. While this integrated approach has only been in place for a short time, it has led to dramatic

improvements in Police crash reporting and enforcement activity and there are already signs that it is beginning to reduce road trauma in the Southern District.

2. BACKGROUND

The Otago and Southland Regions that make up the Southern Police District have a population of around 280,000 people, distributed across a large rural area and the two major urban areas of Dunedin (120,000 people) and Invercargill (55,000 people). The economy of the District is primarily based on farming, but with significant tourism and a strong tertiary education sector in both cities. The area is particularly notable for having a third of its population dispersed in relatively isolated rural towns and communities, for its large rural road network (2090 km of state highways and 15,618 km of other roads), and for the additional road hazards caused by extremes of climate, rugged topography, and the nature of its economy. It is policed by approximately 505 sworn officers supported by 90 non-sworn staff, operating from 45 Police Stations of which 28 are small stations with one to three staff.

3. CRASH REPORTING

In 2000, a comparison between serious crash injuries reported by Police and hospital admission data indicated that the ratio of reported serious injuries to hospital admissions was 0.56 and 0.55 in Otago and Southland respectively. This meant that for every 100 crash casualties admitted to a hospital, Police reported just over half this number of serious crash casualties. Nationally, the figure was even worse as the reporting ratio had been steadily falling and in 2000 reached a low of 0.36.

In addition to the obvious under-reporting, there were other problems with the quality and accuracy of Traffic Crash Reports (TCRs). The TCRs were sometimes incomplete, or had not been sent to the Land Transport Safety Authority (LTSA), which collates and analyses TCRs. Injuries were often inaccurately recorded, if at all. Crash locations were often imprecise, and Blood/Breath Alcohol levels and pre-crash speeds were not recorded in all cases. This combination of under-reporting and poor quality meant that not only was the amount of road trauma under-recorded, but that the information being used as a basis for resourcing, policy, and operational decisions to address key contributing factors in road crashes, such as speed and alcohol, was severely limited.

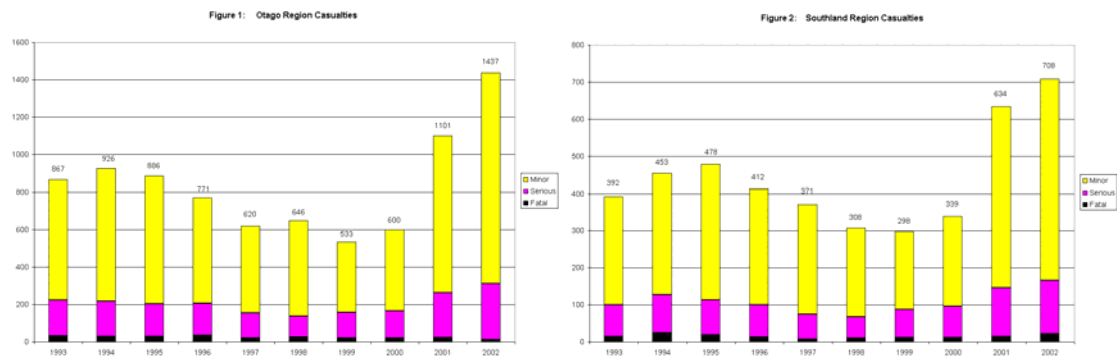
In response Southern District and the LTSA jointly set about to improve crash reporting in order to provide accurate information on road trauma in order to maximise the effectiveness of current activities and develop new initiatives. Crash data had to accurately identify the time and location of greatest crash risk and the main crash factors so it could act as a basis for improving other areas of road safety.

The first step towards improving the data was to run a series of training sessions to provide police officers with an understanding of the importance of accurate data, the common faults with TCRs and the ways in which reporting could be improved. The next step was to develop a crash file audit system for the District. Every crash file is now centrally checked to ensure accuracy and confirm that all the required information has been forwarded to the LTSA.

This audit process has dramatically improved reporting rates and report quality. For example, it ensures that every blood or breath alcohol level (including those under the legal limit) is recorded, thus significantly improving our data on the involvement of alcohol in collisions. This includes ensuring that where blood samples have been taken and forwarded for analysis, the results are included in the amended TCR and supplied to the LTSA. A similar back-capture process has also been used with improving the injury data on TCRs. As victims are often unaware of the full extent of their injuries at the time of the crash, those

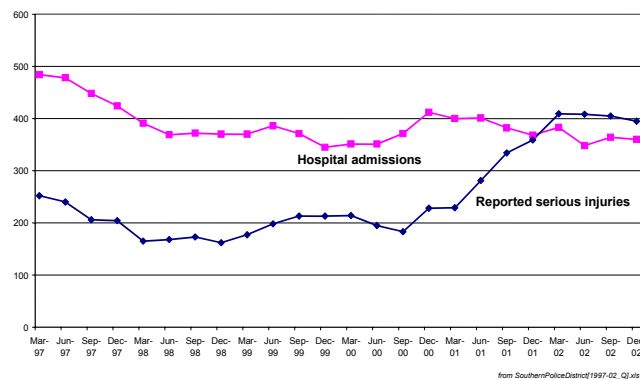
involved in crashes are later contacted by Police and asked to confirm their injuries and treatment.

As a result of this training and audit process, the most recent reporting ratio for the Southern District has risen to 1.15 from the 2000 levels of around 0.55. This means that for every 100 hospitalised casualties, Southern Police now report 115 serious injuries. It is clear that serious injuries do not always result in hospitalisation and the reporting ratio that is now being achieved is considered to be a more accurate reflection of the true level of serious road trauma on Southland and Otago roads. Figures One and Two show the increase in the level of reported casualties, which has more than doubled since the crash reporting system was implemented in 2001.



Over the same period, the number of crash casualty hospital admissions slightly declined, which indicates that the actual level of road trauma has not risen and the significant increase in injury statistics can be attributed to improved reporting. Figure Three shows the trend in hospital admissions compared with Police reported serious injuries, demonstrating the major improvement in injury crash information.

Figure 3: MVC hospitalisations in Otago and Southland, 1997-2002



4. ENFORCEMENT INITIATIVES

New Zealand Police and the Land Transport Safety Authority identified alcohol impaired driving, excessive speed and the failure to wear restraints as the key areas to target enforcement and associated advertising. The successful approach taken by the Victoria Police was recognised and a Peer Review (Hayes, Moloney & Lester 1996) provided direction on how the Victorian model might be emulated.

4.1 Alcohol Impaired Driving Enforcement

While the data on alcohol related crashes was incomplete, it was well known that impaired driving was a major crash risk in rural areas (Bailey, 1995). Some of problems included the

common acceptance of drunk driving as part of rural life due to the lack of alternatives to private transport (Blyth et al, 1995). Also, local Police were sometimes reluctant to enforce traffic laws because of a fear that this would jeopardise public support. Other issues included rural people being aware of Police hours of work, local grapevines that warned of Police activity, and back roads and geographical distances that made it difficult to sustain enforcement. Further, while Police did have data on risk times, specifying exactly where to target enforcement was problematic.

To address these issues, Southern District formed a partnership with the Accident Compensation Corporation (ACC), which provides compensation to injury victims. ACC agreed to provide vehicles and funding to enable Police to target drink driving at high alcohol times throughout the District over three years. Police agreed to provide 30 hours of enforcement activity and a mobile breath testing vehicle (Booze Bus) to process impaired rural drivers each week. Operations began in August of 2001 and are run every weekend at the times of greatest alcohol related crash risk.

These operations were based on the theory of general deterrence developed by Homel (1988). Drink drive offending was rigorously enforced with every driver stopped being breath tested without exception, the operations were sustained and, with the use of the Booze Bus, highly visible, and well publicised (discussed below). The operation was also refined to address the specific problems encountered with drink-drive enforcement in rural areas. Many of these problems are a result of the grapevines in rural areas that warn potential drink drivers when a Police checkpoint is in operation. Rather than deter drink driving, this has two effects. Firstly, patrons either remain at the hotel, drinking more while attempting to outwait Police and then driving drunk, or drivers choose to take a back and often more risky road in an effort to avoid detection. The net effect of either scenario is increased crash risk. Other issues, such as the reluctance of some local Police to enforce traffic law due to a perception that this could put public support at risk, and the large rural road network have also been mentioned.

For these reasons, Southern District's rural drink drive enforcement relies heavily on covert targeting of rural hotels, the use of staff from outside the targeted area, random stops by unmarked police cars on back roads and saturation patrolling in rural areas in an effort to expose the maximum number of drivers to unpredictable breath testing. The goal of this approach is irregular regularity. Potential rural drunk drivers would not know exactly when or where they would be tested, they did know that testing was likely, unpredictable and unavoidable. Through this approach Police were able to use rural grapevines to publicise the programme, as rural people told each other about their experiences of being tested on rural back roads by Police that were generally unknown to them and who were driving covert patrol cars. This 'grapevine publicity' added value and provided free and highly effective advertising of the Police approach.

To enhance this activity, Police began recording where drunk drivers and any persons arrested for non-drink drive offences last drank in order to gather intelligence on which licensed premises were habitually serving patrons to the point of intoxication in breach of liquor laws. This data was used for further targeting and provided to licensing inspectors and public health authorities who have a statutory responsibility to monitor the sale of liquor. The data was also used to assist in apprehending offenders before they had an opportunity to drive and to encourage greater compliance from licensees.

In combination with this enforcement, the LTSA continued with a national drink drive advertising campaign, while Police and LTSA in Otago and Southland maintained a strong local profile by providing local media with press releases on a weekly basis. This generated significant additional publicity that further highlighted the consequences of drunk driving and the Policing activity.

As a result of these efforts the number of prosecutions for drink drive offences rose by 12% to 1,979 in the first 12 months of operation. However, it is difficult to assess the effect on alcohol related crashes as the improved crash reporting rate made comparisons with earlier data meaningless. Nevertheless there are indicators of early success. Since the operations began, there has been a reduction in the number of drunk drivers apprehended at checkpoints as a ratio of all drivers tested. The number of recidivist offenders apprehended as a proportion of total prosecutions has continued to rise, indicating that our targeting is proving effective. A further indicator is that the proportion of first time offenders being apprehended is reducing while the number of recidivist apprehensions is increasing, supporting the view that the tactics employed are deterring first time offending and catching greater numbers of recidivist and potentially more dangerous offenders.

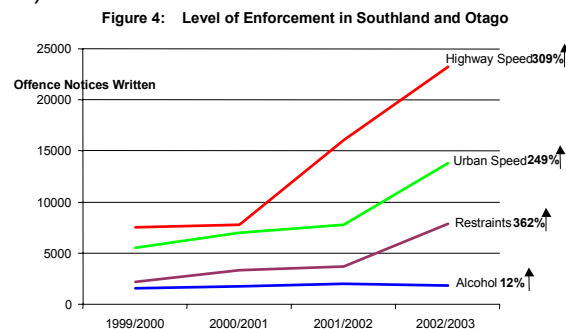
In addition anecdotal reports that many rural licensed premises have bought and/or operate courtesy vans to ferry patrons to and from premises abound and drink drive operations now consistently report heavy use of courtesy vans in rural areas. Finally, while interpretation of Southern District crash data must be treated with some caution because of improved accuracy, the District is now recording the lowest percentage of alcohol related injury crashes of any New Zealand Police District at 11% (LTSA 2003).

4.2 Speed Enforcement

The Southern District's approach to speed enforcement is based on the work of Harrison (1998), who examined the differences between speeding and drink driving. Harrison concluded that speeding countermeasures may need to draw more on widespread negative reinforcement through high levels of detection than was the case with drink driving, which appeared to be significantly influenced through observing enforcement. Raising the level of speeding offence detection appeared to be an effective way to reduce speeds and hence speed related crash risk. In contrast with the general deterrence model applied to drink drive offending, specific deterrence emphasising maximum detection of speed offending was applied in a risk-targeted approach.

Utilising the improving data on crash risk, the state highways (on which the majority of road trauma occurs) were divided into sectors. These sectors were then profiled to determine their relative crash risk per kilometre, taking into account the number, type and severity of crashes, road type, and engineering improvements. Each sector was then prioritised, and police staff tasked to maximise patrol and particularly speed enforcement in high priority and adjacent sectors. Police activity in each sector was then monitored by requiring the sector code to be entered on all infringement notices, ensuring that the appropriate level of resource was applied to areas of high crash risk.

Over the same period, a national highway patrol was established. As a result of the additional staff, improved risk targeting through the use of sector codes, and training sessions for police on the rationale for increased speed enforcement, there was a significant increase in the level of highway speed enforcement, particularly in high risk areas. During the 1999/2000 year, Southern District issued approximately 7,000 speed infringements for highway speed offences. The 2002/2003-year resulted in more than 23,000 notices being issued (See Figure Four).



Police also increasingly enforced lower levels of speed offending. Speed infringements were typically issued for offences 15 – 20 km/hour over the speed limit in the late 1990s with many staff not taking enforcement action until vehicles were detected exceeding the speed limit by 20 km/hour. By 2003, this practice had changed dramatically with 36% of the speed notices issued between 11 and 15 km/hour over the limit (Police policy is to issue those detected at 11km/hour over the limit with an infringement notice). This was part of a national strategy to dramatically lower median and 85th percentile speeds due to the relationship between speed and crash risk. Once again, it is difficult to measure the impact upon crash rates due to the improvement in crash reporting. However, behavioural measures indicate significant improvement. Median speeds reduced in Otago from 101.3 km/hour in 2000 to 99.3 km/hour by 2002. Similarly, Southland highway speeds reduced from 101.1 km/hour in 2000 to 99.7 km/hour in 2002. Similar reductions in 85th percentile speeds occurred reducing from 110 km/hour in Otago and Southland in 2000 to 107 km/hour by 2002.

While the enforcement emphasis was on highway speed, an understanding of the relationship between crash impact speed and car occupant and pedestrian injury also resulted in improvements in the level of urban speed enforcement. Speed notices on urban roads rose from around 5,500 in 1999/2000 to over 14,000 in 2002/2003. Once again, there is evidence of overall gains in urban speed reduction. The mean urban speed in Southland dropped from 55.9 km/hour in 2000 to 54.6 km/hour in 2002 while Otago had a 0.1 km /hour mean speed rise to 53.2 km/hour. However 85th percentile urban speeds fell in both regions. Otago's 85th percentile urban speed dropped 1 km hour between 2000 and 2002 from 59 to 58 km/hour, while in Southland 85th percentile urban speeds dropped 1.5 km/hour from 63 to 60.5 km/hour.

4.3 Restraint Enforcement

Southern District also applied Harrison's research to the problem of restraint wearing rates as the thought processes associated with speeding and restraint wearing appeared to be similar. Working with the LTSA and Local Government Road Safety Co-ordinators Police ran a 'Click it or Ticket' restraint campaign. Again, the approach taken was to extensively publicise increased enforcement and then rigorously enforce seat belt laws.

During the 1999/2000 year, Southern District Police issued 2000 notices for restraint offences but by the 2002/2003 year, the level of enforcement increased to 7,200 notices. Behavioural measures showed overall improvement with front seat restraint wearing rates rising from 92% in 2002 to 93% in 2003. While the overall improvement is positive, there are marked variations within the District. Areas where enforcement was greatest (Invercargill City and Gore District) saw large rises in wearing rates to 97% (the highest in the South Island). Notably, areas where enforcement was poor saw correspondingly poor wearing rates such as in the Southland District (87%), Clutha District (89%) and Queenstown Lakes District (90%).

4.4 Intersection Enforcement

The number of injury crashes occurring at intersections prompted the Southern District, ACC and the Dunedin City Council Road Safety Co-ordinator to trial a programme to reduce the number of collisions at high risk intersections. Twelve locations were identified in Dunedin and each intersection was assigned to specific road policing and general duties staff as of March 2003. The campaign was publicised locally for the first two months through both radio and newspaper advertising and follow up press releases are planned to maintain a profile for the campaign.

Staff were provided with a Risk Targeted Patrol Plan, which included a photograph of the intersection, analysis of the problems, main risk times and a summary of common offences

causing crashes and thus requiring enforcement. Each intersection was assigned a unique sector code in a similar format to those assigned to state highway sectors to allow monitoring of the level of enforcement at each location.

This campaign is on going and evaluation of its effectiveness at reducing injury collisions has not yet been carried out. Early indications are positive as many of these locations have seen noticeable increases in the number of infringements issued with some totalling more than 100 violations each month. Once the programme has been running for twelve months, the impact of the strategy will be assessed.

5. STAFF PERFORMANCE & MOTIVATION

In order to achieve Southern District's mission to reduce road trauma, it was considered that individual accountability for performance was required. To this end, each member involved in road policing was monitored to determine the level of productivity across each of the key enforcement areas. In summary, staff were assigned a specific number of hours of road policing activity to deliver each month, divided across the strategic projects of drink drive, speed, restraint and visible road safety enforcement. A reasonable expectation of the number of offences detected for each type of hour was also set. For example, during an hour of speed enforcement, it was considered reasonable that an individual would on average detect an offence and take positive enforcement action each hour. Similar levels of productivity were expected for patrol time spent on restraint and visible road safety enforcement, while it was recognised that the detection rate for drink drive enforcement would be lower. Overall, an average productivity rate of 0.7 offences per strategic hour was set as a target. Very few staff had any difficulty achieving this performance level and in fact many recorded offences rates during the 2002/2003 year of 0.95 offences per hour and higher.

The rationale for this approach was simple. Objective behavioural measures demonstrated that a consistent percentage of vehicle occupants were not restrained, exceeded speed limits and committed other violations (e.g. failing to stop at traffic lights, unsafe lane changes etc) that required firm enforcement. Secondly, warning errant drivers was considered ineffective and for that reason, warnings were not measured or reported upon thus encouraging Police Officers to take formal enforcement action (i.e. issue a notice for offences detected). Other measures put in place ensuring that high percentages of trauma promoting offences (i.e. those which caused injuries in road crashes) were issued in preference to administrative breaches that were not likely to reduce crashes. The last aspect of monitoring was measuring the extent to which staff issued notices at low threshold speeds and for this reason, a minimum of 25% of notices were expected to be in the 11 – 15 km/hour range. By providing these measures to staff and supervisors each month, it ensured staff were aware of their own performance and the District as a whole could have assurance that performance was generally consistent.

In combination with performance monitoring, a comprehensive training package was developed and presented to Police staff to both motivate and educate staff about the importance of road policing, the potential for police to reduce road trauma, and to increase staff understanding of the physics of a crash. While a detailed explanation of this training and it's impact is beyond the scope of this paper, it cannot be overstated that winning the hearts and minds of police officers and having them view enforcement as a highly effective in saving lives is a fundamental link in developing a successful road safety programme.

6. SUMMARY

While the enforcement initiatives in Southern District are based on improved data, the improvement in crash reporting rates has meant that it has been difficult to assess the

effectiveness of initiatives themselves. However, the tactics employed are based on sound research and it can be expected that over time, they will be successful in further reducing road trauma.

Despite the significant increase in enforcement, which by its nature does impact upon members of the public who may not ordinarily interact with Police, public support for the approach is strong. The 2003 'Public Attitudes to Road Safety' survey conducted by the LTSA shows that nationally, 56% of New Zealanders believe Police efforts in catching people breaking road safety laws should be increased and 34% believe it should be maintained at current levels. Support in Otago and Southland is consistent with the national results. Concerns that rigorous enforcement would alienate the public have not been borne out and public support remains high.

The number of fatal casualties for the 2002/2003 financial year was 31, two lower than in the previous year. While this is a small reduction in a number prone to fluctuation, the crash related hospital admissions have been reduced, which gives some assurance that the integrated approach outlined in this paper is beginning to gain traction. The independent behavioural measures all show positive trends in terms of improved restraint wearing rates and reductions in both urban and highway speeds, while the proportion of alcohol related injury crashes is the lowest in New Zealand.

The challenge over coming years will be to maintain the momentum, continue to develop and adjust the strategies and undertake on going reviews to ensure that Police enforcement is at all times strategic, targeted and evidence based.

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Keywords

Drink Driving, Speed Enforcement, Restraint Enforcement, Intersection Enforcement, Crash Reporting