

Title

Courtesy speed checks and their effect on vehicle speeds and driver attitude.

Authors

Wall J. P., Roads and Traffic Authority, NSW; Powell, I.; Roads and Traffic Authority, NSW; James, K. L.; Roads and Traffic Authority, NSW.

Abstract

The courtesy speed check (CSC) program was undertaken as a result of an increased number of speed related fatalities within the Hunter region of NSW in 2000. Known black lengths within the region which were potential fixed speed camera sites due to their crash history and high recorded travelling speeds were targeted with CSCs. A literature and internet search was initially undertaken to inform the design of the program. Laser speed feedback units measured the speeds of oncoming traffic and displayed speeds on an electronic display board. Automatic vehicle speed and classification counters were installed at survey locations facilitating the measurement of speeds at CSC sites and downstream to qualify any residual reduction in vehicle speeds. Interviews were conducted with 214 drivers who had passed a CSC in operation to extract their attitudes and self reported behaviours. Results indicated a high level of support for the CSC program, an increased awareness of vehicle travelling speed and evidence of speed reductions.

Keywords

Speed check, vehicle speeds.

Introduction

Speeding was the primary contributing factor in 43 per cent of all fatal road crashes within Hunter region during 2000 compared to 32 per cent of all fatal crashes in metropolitan NSW. To address this increase, a key element of the RTAs speed management strategy for Hunter region was the introduction of CSCs.

CSCs have been utilised by local Government Road Safety Officers throughout NSW, but were originally trialed successfully by the Roads and Traffic Authority (RTA) during the period of the Olympic Games in 2000.

RTA Vehicle Regulation Inspectors (IVRs) were positioned at the roadside where they could measure the speed of approaching vehicles. An electronic display board was erected and vehicle speeds were recorded for motorists. Signage stating that a CSC was being undertaken was visible to approaching motorists.

Methods

A literature search was undertaken utilising the Australian Transport Index, the IRRD and TRIS International Databases. An Internet search was also conducted using the Google Search Engine.

Three locations within the Hunter region were selected for the evaluation. These sites were selected on the basis that they narrowly missed selection as fixed speed camera sites and due to their recognised and measured speeding problem as well as crash history. Locations utilised were the New England Highway, Singleton (60 km/h); Pacific Highway, Doyalson (80 km/h); and Pacific Highway, Bulahdelah (100 km/h).

A Traffic Control Plan was established to identify requirements for a safe operating area. IVRs parked their enforcement vehicle on the roadside and erected a sign stating 'Courtesy Speed Check'. A hand held laser speed feedback unit measured the speed of oncoming vehicles and these were displayed on a large digital display board visible to motorists.

At each location, automatic vehicle speed and classification counters were installed (*vehicle study*). Counters recorded the speed of vehicles approaching the CSC, adjacent to the CSC and 300-500 metres following the CSC. The speed of vehicles travelling in the opposite direction were also recorded. Counters were installed for three weeks. Week one represented a pre CSC sample, week two denoted the period in which CSCs were being undertaken and week three provided a post CSC sample of vehicle speeds.

Following a successful pilot study two weeks earlier, interviews were conducted with 214 drivers at service stations downstream from each of the above CSC sites (*driver study*). Relatively equal proportions of drivers were surveyed at each location. Drivers were selected on the basis of whether or not they were aware that their speed had been checked and were questioned about their attitudes and self reported behaviour on encountering the CSC. The age of respondents was distributed relatively evenly among those aged 17 years and older. A 60/40

ratio between males and females was adopted as males represent a target group within speed management. All interviews were conducted during daylight hours and one third of the interviews at each site were conducted on the weekend.

Results

Vaa et al. (1) demonstrated substantial decreases in average speeds of vehicles passing a roadside speed feedback device in Norway. The reductions in average speeds ranged from 5.2 to 6.8km/h. Vaa et al. (1) failed to show any decrease in the speeds of vehicles travelling in the opposite direction. Bloch (2) reported a reduction of 9.3km/h reduction in the speeds of vehicles passing a speed display board and a smaller reduction in speeds 0.32km downstream from the board.

Driver Study

Results from the *driver study* indicated that the majority of motorists (57 per cent) were aware that their speeds had been checked as a result of seeing the ‘Courtesy Speed Check’ sign. A further 24 per cent of drivers saw their travelling speed on the display board and 21 per cent saw the IVRs enforcement vehicle.

An impressive 68 per cent of respondents were aware that the RTA was responsible for the CSC. This was an increase from 61 per cent in October 2000 following the use of CSCs during the Olympic Games period. Similarly, 17 per cent of drivers in October 2000 were unsure of who was conducting CSCs, compared to 7 per cent in this evaluation. Interestingly, younger drivers and men were more likely to attribute the CSC program to the RTA, and 21 per cent of drivers attributed the current program to the NSW Police Service.

Importantly, 39 per cent of drivers were ‘a lot more’ aware of the speed at which they were travelling after passing a CSC. A further 43 per cent were ‘a bit more’ aware of their travelling speed. A total of 82 per cent of respondents were more aware of their travelling speed after passing a CSC.

When motorists were asked what they did when they encountered a CSC, 77 per cent stated that did not alter their driving behaviour; 18 per cent of drivers reported slowing down; and 5 per cent of drivers did something else such as “I commented ‘That’s a good thing, there should be more of it’.” Of those respondents who did not change their driving behaviour, 95 per cent reported that they did not slow down as they “weren’t speeding in the first place”. Pleasingly, only 3 per cent of respondents did not change their behaviour as they knew they could not be infringed for speeding by the CSC.

Of those who reported slowing down, the majority (31 per cent) were younger drivers aged 17 – 25 years, and women were twice as likely as men to report slowing down (24 per cent compared to 13 per cent). Motorists travelling in the 100 km/h speed zone in Bulahdelah were more likely to report slowing down than those in the 60 km/h or 80 km/h zone.

Interviews revealed an overwhelming level of support for the CSC program, with 69 per cent of respondents reporting that they strongly supported the use of CSCs, and a further 27 per cent supported their use. 4 per cent neither supported or opposed their use. Hence 96 per cent of all respondents supported the use of CSCs. This represents an increase from 89 per cent in October 2000. Table 1 presents the basis for support of the CSC program.

Table 1

Why do you support the use of courtesy speed checks?	Percentage
A good reminder	56
Improves road safety/safer on our roads	20
Reduces speeding	14
Too many people speed	13
Helpful – helps people without fining them	13
Prevents accidents/crashes	11
Stops road toll rising/people being killed	6
*Other	22
Don’t know	-

*Other responses included “makes people more accountable” and “keeps drivers on their toes”.

Only one respondent opposed the use of CSCs on the basis that they are “a waste of money”.

Over half of all drivers stated that they would check the speed at which they were travelling if they saw a CSC in the future and a further 15 per cent of drivers affirmed that they would slow down/reduce their speed. Equally positive is that only 6 per cent of drivers surveyed stated that they would not change the way they drive for reasons other than that they would not be speeding.

A series of suggested future locations for CSCs were presented to drivers, with country highways and school zones seen to be most appropriate for the use of CSCs. Just over one third (34 per cent) of respondents stated that they would like to see CSCs undertaken at all locations.

Vehicle study

A large proportion of respondents claimed that they did not slow down on encountering a CSC. However, the vehicle study confirmed that a significant proportion of drivers were travelling below the speed limit during week two when CSCs were taking place, as displayed in Table 2.

Table 2

% Vehicle Speeds Relative To Speed Limit		
	Week One	Week Two
	CSC Not In Operation	CSC In Operation
Below speed limit	52%	87%
Above speed limit	48%	13%

CSCs lead to a significant reduction in vehicle speeds in all three locations both in the direction being observed and in the opposite direction during the times the CSCs were being undertaken. Reductions of up to 14 per cent in mean and 85th percentile speeds were observed in the direction being surveyed, and speed reductions of up to 8 per cent were observed for vehicles travelling in the opposite direction to that used for the CSCs. Speed reductions were reasonably uniform across all vehicle types.

Significant improvements in the speed limit compliance rate from 52 per cent to 87 per cent were achieved during the CSC hours. There was also a marginal reduction in vehicle speeds of up to 5 per cent at the secondary site, approximately 300-500 metres following the CSC site during times in which the CSCs were in operation. There was no residual reduction in vehicle speeds after the CSCs ceased.

Conclusions

Findings from the *driver study* clearly demonstrate the value of the RTA’s CSC program as a means of increasing driver awareness and reducing travel speeds. The CSC program boasts extremely high levels of community support. Furthermore, during times in which CSCs were operational, the proportion of drivers exceeding the speed limit was significantly reduced. Importantly, there was no evidence of misuse of CSCs. The study found little evidence for any ‘halo effect’ with CSCs downstream of the study sites or one week after the CSCs were in operation. However, it is important to note that CSCs did have an effect on vehicles travelling in both directions when seen by drivers. These findings confirm that there is great potential for the use of CSCs in the future as an effective speed management strategy for locations with a speed related crash history or a significant speeding profile.

The program is limited in its applicability to high speed zone and multiple lane roads. Multiple lanes are unable to be monitored simultaneously with existing equipment. Difficulties arise in terms of which lane to target, how drivers will know if it is in fact their speed being displayed and whether the visibility of both signage and vehicle speeds on a display board are adequate at high speeds.

The RTA is now working with NSW Police Local Area Commands in a number of areas to establish enforcement sites downstream from CSC sites, or at the actual CSC site at a later date, to raise the perceived risk of detection and subsequent infringement if speeding in the vicinity of CSC sites.

High levels of community support, combined with increases in driver awareness and documented reductions in vehicle travelling speeds make the CSC program an attractive option for areas requiring countermeasures for excess speed. The program lends itself particularly well to sites which may not meet the criteria for alternative treatments such as speed cameras or engineering alternatives, and is highly suitable as a speed management tool on local roads.

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References

1. Vaa T., Ragnoy A., Saetermo I.A.F., Two experiments with a mobile roadside speedometer in Vestfold county, Norway: The effects upon speed. Proceedings of the Conference: Road Safety in Europe and Strategic Highway Research Program, No. 4A, Part 3, 1996, pages 152 – 165.
2. Bloch S.A., Comparative study of speed reduction effects of photo-radar and speed display boards. Transportation Research Record 1640, Paper no. 98-1417, 1998, pages 27 – 36.

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