



Use of manual speed alerting and cruise control devices by car drivers

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Abstract

A number of in-vehicle technologies have been developed that have significant potential to reduce the incidence and severity of speed-related crashes. Two of the most widely implemented of these are conventional cruise control and manual speed alerting devices. However, almost nothing is known about the extent to which drivers use these devices and whether they are effective in helping drivers reduce speeding. This study assessed the use, acceptability and effectiveness in reducing speeding of manual speed alerting and cruise control devices to a sample of drivers from the Australian state of New South Wales. Four focus groups were conducted; two in Sydney (metropolitan) and two in Wagga Wagga (rural), involving 31 drivers aged 25–49 years, who were either users or non-users of the devices. The participants held positive attitudes towards manual speed alerting and cruise control systems and felt that these devices are generally effective in helping them to control and maintain their speed. However, the rural participants use cruise control more regularly than metropolitan participants, while the metropolitan participants reported that they use their speed alerting system more than rural participants. Preliminary recommendations deriving from the research are made.

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1. Introduction

1.1. The speeding problem

Speeding constitutes a significant road safety problem in Australia. Each year, over 1700 people die on Australian roads and speeding is estimated to contribute to approximately 40% of these fatal crashes (ATSB, 2002; RTA, 2002). It is recognised that even small reductions in excessive and average traffic speeds will significantly increase safety for all road users. In response, road authorities in Australia have introduced numerous countermeasures designed to reduce speeding, including advertising campaigns, fixed speed cameras and the introduction of double demerit points over holiday periods (RTA, 2002).

In recent years, various on-board vehicle technologies have also been developed in an attempt to reduce vehicle travel speeds. These include manual speed alerting systems, Intelligent Speed Adaptation (ISA), conventional cruise control and adaptive cruise control (ACC). To date, the two most widely implemented of these technologies are the conventional cruise control and manual speed alerting devices. One or both of these devices are currently a standard feature in most new vehicles sold in Australia. However, virtually nothing is known about the extent to which conventional cruise control and manual speed alerting systems are used by drivers, under what circumstances they are used, and whether they are effective in helping drivers moderate speed (Regan et al., 2001). This is surprising given that, if properly designed, used and promoted as road safety countermeasures, these devices have the potential to reduce the incidence and severity of speed-related crashes.

1.2. Cruise control

Conventional cruise control systems are a popular feature on cars, particularly in countries where roads are longer and destinations are farther apart, such as in Australia. Conventional cruise control systems allow drivers to manually set the speed at which they wish to travel and the system then takes over control of the throttle and automatically maintains that speed. Many cruise control systems can also accelerate or decelerate the car at the touch of a button and can resume the last set cruise speed if the system has been disengaged (Patterson, 1998).

Despite being a common feature on cars, very few studies have examined the safety effects and acceptance by drivers of conventional cruise control systems. Most studies examining conventional cruise control have compared driving performance while using these systems with driving performance while using ACC, which controls speed and automatically slows down the host vehicle and causes it to maintain a pre-defined minimum headway if it approaches a slow moving vehicle ahead. Very few studies have exclusively examined driving performance and behaviour while using conventional cruise control.

A review of the available literature on conventional cruise control conducted by SWOV found very few studies examining the road safety effects of cruise control systems (van Kampen, 1996). However, the studies reviewed found positive road safety benefits of cruise control systems including lower average travel speeds, reduced speed variability and more stable traffic flow. These studies also estimate that with the widespread introduction of cruise control, there will be a 50% decrease in crashes involving passenger vehicles resulting from a reduction in lane changes, overtaking manoeuvres and braking.

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