

NRMA-ACT Road Safety Trust Position Paper

Driver Distraction

The Trust

The NRMA-ACT Road Safety Trust was established as a public charitable trust in 1992. The Trust's goal is to help achieve a driving environment in the ACT characterised by an absence of deaths and of serious injuries caused by crashes.

The Trust sees itself as having four main roles:

- an awareness role
- an educative role
- a training role, and
- a research support role.



This paper is produced by the Trust as part of a series whose aim is to help fulfil those roles. The initial drafting and re-drafting of the paper was undertaken by Dr Kristie Young, Research Fellow at Monash University Accident Research Centre. The paper was subsequently edited by the Trust with professional assistance from Ms Clare Murray.

The Problem

Driver distraction is seen globally as a threat to road safety¹. Over the last ten years, new technological devices (mobile phones, MP3 players etc) have been developed for use within cars, and these give drivers and passengers access to a range of functions while in the vehicle, including mobile phone communication (calls and SMS), email, social networking, song lists, maps, navigation and traffic congestion information. The introduction of these devices into the vehicle has resulted in greater demand being placed on the drivers' visual and cognitive functions, and can distract drivers from driving safely².

Driver distraction has been defined as the "diversion of attention away from activities critical for safe driving towards a competing activity"³.

Research distinguishes between three types of driver distraction that occur

- **Visual distraction**, as when drivers remove their eyes from the road for an extended period of time for example, to read a message on a mobile phone or on a billboard;
- **Cognitive distraction**, as when people take their minds off the road, listening to a hands-free phone conversation, or daydreaming;
- **Physical distraction**, as when drivers remove one or both hands from the steering wheel to manipulate an object or shift their body out of the normal driving position, and this interferes with vehicle control for example, writing a text message or obtaining a location from a GPS.

A distracting activity may involve one or more of these forms of distraction. For example, using a mobile phone may involve all forms of distraction: *physical* distraction caused by dialling a phone number; *visual* distraction caused by looking at the phone to dial; and *cognitive* distraction created by focusing attention on the phone conversation.

Prevalence of Driver Distraction

It is plain from abundant research that many drivers engage in distracting activities, and that this is particularly the case for drivers who are young, inexperienced, travel in urban areas and return high annual kilometres travelled⁴⁻¹⁰. Audio entertainment systems are one of the most common distractions, with approximately 95 per cent of drivers listening to the radio, CDs or MP3 players⁴⁻¹⁰.

Mobile phone use is also common among drivers, in other countries as well as our own: up to 40 per cent of Canadian^{6,11} and around 30 per cent of Swedish¹² and UK¹³ drivers apparently use mobile phones while driving. In Australia, around 60 per cent of drivers reported using a mobile phone¹⁰. The 2013 Road Safety Community Survey published by the Justice and Community Safety Directorate, ACT government found that "Of continuing concern within the research is that the analysis identifies a high percentage of residents (13%) who answer their hand held mobile phones when driving, 4% stating that they do this all the time" ¹⁴.

A recent project conducted in the ACT recorded the driving behaviour of nine drivers, resulting in an analysis of 27 hours of on-road video recordings. Results from this footage revealed that distracting activities are as common in the ACT as other parts of Australia¹⁵. Activities such as talking with passengers (100 per cent of trips with passengers), grooming (91 per cent of trips), adjusting entertainment system (58 per cent) and searching for objects inside the car (44 per cent) were the most common distracting activities, while reading (1 per cent), texting (2 per cent), eating and drinking (8 per cent) and making/receiving a phone call (9 per cent) were less frequent.

How Does Distraction Affect Driving and Crash Risk?

A number of driving behaviours are affected by driver distraction:

- reduced lateral control, for example the ability to maintain lane position;
- reduced longitudinal control, for example the ability to maintain an appropriate speed and distance to vehicles ahead;
- slower detection and reaction times to roadway events, particularly those occurring in drivers' peripheral vision — for example vehicles entering from side-streets or changing lanes;



- an increase in the number of missed traffic signals and signs;
- 'tunnel vision', or impaired visual search patterns and scanning;
- risky decision-making, for example gap-selection when turning or overtaking;
- · reduced awareness of surrounding traffic; and
- increased mental workload.

The contribution of driver distraction to road crashes is not well known, even in countries with good road-safety records like Australia. The ACT, like many Australian jurisdictions, does not have the option on crash report forms for recording the presence of distraction as a contributing factor to an incident, and so detailed data on the role of distraction in road crashes in the ACT is limited. Other research, however, estimates that distraction is a contributing factor in between 10 per cent and 23 per cent of all road crashes and near crashes^{16, 17,18}.

Activities that require a high amount of visual attention (eyes off the road) are typically associated with higher crash risk than tasks with low visual demand (e.g. talking on a phone)^{16,19,22,23}. Tasks that require drivers to remove their eyes from the road for more than 2 seconds are associated with a two-fold increase in crash/near-crash risk^{16,19}. Research^{16,19,20,21} suggests strongly that the most serious distractions are those involving using a mobile phone, reaching for a moving object in a vehicle, or dealing with an animal or an insect inside the vehicle. The worst distraction of all, by far, is text messaging. Drivers who engage in this practice are 23 times more likely to be involved in a crash than drivers who avoid it.

What is the law in the ACT regarding driver distraction?

The Australian Road Rules apply in the ACT under the Road Transport (Safety and Traffic Management) Regulation 2000. Distracted driving is addressed by a number of these road rules:

Rule 300 - Use of Mobile Phones

Using a mobile phone while driving is prohibited except to make or receive a phone call provided the phone:

- Is secured in a commercially designed holder fixed to the vehicle, or
- Can be operated by the driver without touching any part of the phone, and is not resting on any part of the driver's body, e.g. between the chin and shoulder or resting on the driver's lap.



The use of all other functions of the phone, including text messaging, video calls and emailing is prohibited.

Rule 299 - Television receivers and visual display units in motor vehicles

It is prohibited to drive a motor vehicle with a television receiver or visual display unit operating in the vehicle if any part of the image on the screen:

- Is visible to the driver from the normal driving position, or
- Is likely to distract another driver.

This rule does not apply if the driver is driving a bus and the visual display unit displays a destination sign or other bus sign; or if the visual display unit is a driver's aid; or the unit is fitted to a police or emergency vehicle.

Other Relevant Road Rules

A range of other road rules may indirectly apply to drivers if they make errors or break the law as a result of being distracted. These could include, but are not limited to:

- Rule 126 Keeping a safe distance behind vehicles
- Rule 146 Driving within a single marked lane or line of traffic
- Rule 297 Driver to have proper control of a vehicle, etc.

What is the ACT Doing to Manage Driver Distraction?

Driver distraction is highlighted as one of the key factors leading to crashes in the ACT, and is listed as a key action area in the ACT Road Safety Strategy 2011-2020²⁴. The ACT government has released a brochure outlining the dangers of driver distraction²⁵ and is undertaking a range of other initiatives under its Road Safety Action Plan 2011-2013²⁶ to raise awareness of distraction among the community and improve compliance with existing laws:

- implementing awareness campaigns to emphasise the risks of driver distractions eg the campaign targetted at talking on a hand-held mobile phone;
- implementing television and radio awareness campaigns that target the dangers of using mobile phones while driving and encourages all road users to reduce their use, and
- enforcing the laws on using a mobile phone while driving.

The next Action Plan is currently being developed and will be released for public comment.

Trust Policy Position on Driver Distraction

Driver distraction is an important and growing road safety issue. While the primary responsibility of the driver is to operate a motor vehicle safely, driver distraction will never be fully eliminated because 'distraction' is part of human awareness, while both the road system and motor vehicles are becoming more complex.

The Trust *endorses* the adoption of a 'safe systems' approach to managing driver distraction, where the emphasis is on reducing both the incidence of driver distraction, and the effect of any crash caused by distracting activities. Distraction is a complex issue, and different stakeholders play a role in its management, from regulating the design of equipment and technology, to legislating against certain activities and designing the roadway to be accommodating of the errors made by distracted drivers. The Trust will continue to monitor and promote research on distraction in areas where evidence is lacking, to establish a solid evidence-base on which to develop distraction policies. These include, as a priority, evidence on the extent of the distraction problem in the ACT and Australia more broadly, both in terms of driver exposure to distraction and the role of distraction in crashes.

The Trust *encourages* targeted public awareness and education campaigns about driver distraction, and supports and promotes appropriate legislation and enforcement activities in the ACT community. It is the Trust's view that these activities should be targeted towards younger drivers, visually demanding tasks such as text messaging/emailing, and accessing social

will this be the last msg you receive?

networking (Twitter, Facebook) and other internet sites. The Trust *encourages* all major ACT employers with car fleets to make distraction a prominent feature in their fleet-management policies.

References

- 1. WHO. (2009). Global status report on road safety. Time for action. 20 July 2009; Available from: http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf.
- 2. NHTSA. (2009). Driver electronic device use in 2008. Traffic Safety Facts, National Highway Traffic Safety Administration: Washing ton, DC.
- 3. Lee, J. D., Young, K. L., & Regan, M. A. (2009). Defining driver distraction. In M. A. Regan, J. D. Lee & K. L. Young (Eds.), *Driver Distraction: Theory, Effects, and Mitigation*. Boca Raton: Florida: CRC Press.
- 4. Gras, M.E., et al. (2007). Mobile phone use while driving in a sample of Spanish university workers. Accident Analysis & Prevention. 39(2): p. 347-355.
- 5. Huemer, A.K. & Vollrath, M. (2011). Driver secondary tasks in Germany: Using interviews to estimate prevalence. Accident Analysis & Prevention. 43(5): p. 1703-1712.
- 6. Laberge-Nadeau, C., et al. (2003). Wireless telephones and the risk of road crashes. Accident Analysis and Prevention. 35: p. 649-660.
- 7. McEvoy, S., Stevenson, M.R., & Woodward, M. (2006). Phone use and crashes while driving: a representative survey of drivers in two Australian states. Medical Journal of Australia. 185: p. 630-634.
- 8. Stutts, J., et al. (2005). Drivers' exposure to distractions in their natural driving environment. Accident Analysis & Prevention. 37: p. 1093-1101.
- 9. Sullman, M.J.M. & Baas, P.H. (2004). Mobile phone use amongst New Zealand drivers. Transportation Research. Part F 7: p. 95-105.
- 10. Young, K.L. & Lenné, M.G. (2010). Driver engagement in distracting activities and the strategies used to minimise risk. Safety Science. 48: p. 326-332.
- 11. Beirness, D., Simpson, H.M., & Pak, A. (2002). The Road Safety Monitor Driver Distraction, The Traffic Injury Research Foundation: Ottawa, Ontario. p. 1-20.
- 12. Thulin, H. & Gustafsson, S. (2004). Mobile Phone Use while Driving. Conclusions from four investigations, Swedish National Road and Transport Research Institute: Linkoping, Sweden.
- 13. Lansdown, T.C. (2012). Individual differences and propensity to engage with in-vehicle distractions A self-report survey. Transportation Research Part F: Traffic Psychology and Behaviour. 15(1): p. 1-8.
- 14. ACT Government. (2013). 2013 ACT Road Safety Community Survey Available from http://www.justice.act.gov.au/safety_and_emergency/road_safety
- 15. Nevile, M. & Haddington, P. (2010). In-car distractions and their impact on driving activities, Department of Infrastructure and Transport: Canberra, ACT.
- 16. Klauer, S.G., et al. (2006). The impact of driver inattention on near-crash/crash risk: an analysis using the 100-Car Naturalistic Driving Study data, Virginia Tech Transportation Institute: Blacksburg, Virginia.
- 17. Stutts, J.C., et al. (2001). The role of driver distraction in traffic crashes, AAA Foundation for Traffic Safety: Washington, D.C. p. 63.



- 18. Wang, J.S., R.R. Knipling, and M.J. Goodman. (1996). The role of driver inattention in crashes: New statistics from the 1995 Crashworthiness Data System. In 40th Annual Proceedings of the Association for the Advancement of Automotive Medicine. Vancouver, Canada.
- 19. Olson, R.L., et al. (2009). Driver distraction in commercial vehicle operations, Virginia Tech Transportation Institute: Blacksburg, Virginia.
- 20. McEvoy, S.P., Stevenson, M.R., & Woodward, M. (2007). The prevalence of, and factors associated with, serious crashes involving a distracting activity. Accident Analysis & Prevention, 39(3): p. 475-482.
- 21. Redelmeier, D.A. & Tibshirani, R.J. (1997). Association between cellular-telephone calls and motor vehicle collisions. The New England Journal of Medicine. 336: p. 453-458.
- 22. Engstrom, J., Johansson, E., & Ostlund, J. (2005). Effects of visual and cognitive load in real and simulated motorway driving. Transportation Research Part F: Traffic Psychology and Behaviour. 8(2): p. 97-120.
- 23. Greenberg, J., et al. (2003). Evaluation of driver distraction using an event detection paradigm. Journal of the Transportation Research Board. No 1843.
- 24. ACT Government. (2011). Road Safety Strategy 2011-20, ACT Government: Canberra, ACT.
- 25. ACT Government. The dangers of driving distraction, www.transport.act.gov.au, Editor: Canberra, ACT.
- 26. ACT Government. (2011). Road Safety Action Plan 2011-2013, ACT Government: Canberra, ACT.