

**Submission**

**No 32**

## **DRIVER AND ROAD USER DISTRACTION**

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**Date Received:** 4/05/2012

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Dear Mr Greg Aplin,

Enclosed is a copy of Headstart's submission to the Staysafe inquiry entitled 'Driver and Road User Distraction'. This submission has taken all points of reference into account;

- a) The nature and extent of distraction as a contributor to crash casualties on NSW roads;*
- b) Current rates and future trends in take up of electronic devices, both by road users and vehicle manufacturers;*
- c) Regulatory means of enforcing harm minimisation caused by such devices;*
- d) Technological solutions to managing the harmful consequences of distraction;*
- e) Other solutions to reduce information overload for road users; and*
- f) Any other related matters.*

Information, discussion and recommendations are provided on these key areas which we feel need to be addressed by further legislative reform, including: tighter measures for enforcing driver awareness to the dangers of driver and road user distraction, creating an onuses on vehicle manufacturers to take responsibility in the areas addressed in the points of reference and further research into developing technology to minimise the chance of direct danger on drivers and road users. Our discussion and recommendations for these topics has been formatted to provide you with clear responses to the aforementioned issues and the implications for Headstart and our peak body the Brain Injury Association of New South Wales.

If there are any questions and/or comments regarding the information provided in this submission please contact us using the details provided at the top of this page.

Sincerely,

Sam Parmeter, Lucinda Johnson, Sally Dunn and Gabrielle Tawyer, *on behalf of:*  
Headstart Newcastle.

# Driver and Road User Distraction (Inquiry)

Staysafe (Road Safety) Committee

*On behalf of:*

Headstart Acquired Brain Injury Services, Newcastle

## **Driver and Road User Distraction:**

- a) The nature and extent of distraction as a contributor to crash casualties on NSW roads;*
- b) Current rates and future trends in take up of electronic devices, both by road users and vehicle manufacturers;*
- c) Regulatory means of enforcing harm minimisation caused by such devices;*
- d) Technological solutions to managing the harmful consequences of distraction;*
- e) Other solutions to reduce information overload for road users; and*
- f) Any other related matters.*

Prepared by Sam Parmeter, Lucinda Johnson, Sally Dunn and Gabrielle Tawyer.

03.05.2012

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# 1.0 Introduction

Headstart is exposed daily to the trauma of life changing head injuries which occur on the roads every day. Our staff works closely with victims of road accidents, which we feel, could be prevented with the correct road user policy and legislation in place. In addition to providing short and long-term assistance to people who have sustained a brain injury, Headstart also focuses on making information, counselling and brain injury awareness a top priority. As our peak body the Brain Injury Association of New South Wales states on their web page “we are dedicated to achieving equality for people living with an acquired brain injury” (ABI).

This direct and close work with victims of road accidents enables us to use our insight into how the points of reference of this particular inquiry affect the people we work with day- to- day. According to the *California Department of Motor Vehicles* “driver distractions are the leading cause of most vehicle crashes and near-crashes. According to a study released by the National Highway Traffic Safety Administration (NHTSA) and the Virginia Tech Transportation Institute (VTTI), 80% of crashes and 65% of near-crashes involve some form of driver distraction” (dmv.ca.gov online).

Driving is actually a complex task - to anticipate and avoid hazards on the road, drivers need to concentrate and give it their full attention. Getting distracted doesn't take much – we all experience distractions from time to time from our passengers, mobile phones, radios or CD music. “Distractions need to take second place to the task of driving safely” (ors.wa.gov.au online).

This submission has been formed around focus on reference points a), b), c) and d) paying close attention to the ways that tighter measures for enforcing driver awareness to the dangers of driver and road user distraction can be created, forming an onuses on vehicle manufacturers to take responsibility in the areas of driver distraction and technology while looking into further research for developing technology to minimise the chance of direct danger on drivers and road users. Therefore it has been our intention in this submission to address:

- New legislation created to limit driver exposure to, and deter drivers from engaging in, activities which have the potential to distract them. There is sufficient evidence, for example, ‘to justify a ban on the use of hands-free phones whilst driving if this can be practically enforced by the Police’ (Young, Regan and Hammer 2003).
- Minimising technology-based distraction by developing what is known as the Human Machine Interface (HMI) ergonomically. In Europe, North America and Japan, draft standards have already been developed which contain performance based goals which must be reached by the HMI so that the in-car technologies do not distract or visually entertain the driver while driving (e.g., the

European Statement of Principles for Driver Interactions with Advanced In-vehicle Information and Communication systems in Young, Regan and Hammer 2003).

- Education and training through licensing measures. Handbooks for learner and probationary drivers highlighting the implications of driver and road user distraction.

## 2.0 Background

*Driver distraction is one form of driver inattention and is claimed to be a contributing factor in over half of inattention crashes (Stutts, Reinfurt, Staplin & Rodgman, 2001; Wang, Knipling & Goodman, 1996 in Young, Regan and Hammer 2003).*

“We all see drivers and pedestrians using mobile phones, music players, GPS equipment and other devices while in traffic, and we hear of deaths and injury attributed to their use. But would more laws and personal restrictions be an overreaction or sensible and necessary?” (Greg Aplin MP 2012).

The Department of Infrastructure and Transport outlines that ‘on average, four people are killed and 90 are seriously injured every day on Australia's roads. Almost everyone has, at some stage, been affected by a road crash.

‘The *National Road Safety Strategy 2011-2020* was released on 20 May 2011 by the Australian Transport Council (ATC).

“The strategy is firmly based on Safe System principles and is framed by the guiding vision that no person should be killed or seriously injured on Australia's roads. As a step towards this long-term vision, the strategy presents a 10-year plan to reduce the annual numbers of both deaths and serious injuries on Australian roads by at least 30 per cent” (infrastructure.gov.au online).

Catherine King MP wrote in a joint release with Antony Albanese in 2011 that ‘the Australian Government recently announced a new fleet purchasing policy, which mandates that all light passenger vehicles purchased by the Australian Government must have a 5 star ANCAP safety rating from 1 July 2011.

“This is a key element of the Safe Vehicles component of the strategy and I am proud that the Australian Government is taking a lead on this issue,” she said.

## 3.0 Driver and Road User Points of Reference

### 3.1 The nature and extent of distraction as a contributor to crash casualties on NSW roads.

The Australian Transport Council and its National Road Safety Strategy 2011 – 2020 and as NSW's Roads and Maritime Services' Centre for Road Safety both place a large emphasis on speeding to reduce collisions and fatalities on the roads (ATC 2012) (NSW RMS, 2012). However, the issue of driver and road user distraction on NSW roads requires consideration and public policy development, as the correlation between driver distraction and crash casualties is irrefutable.

Jane Stutts, an associate director for social and behavioral research, states that “distraction occurs when a driver is delayed in the recognition of information needed to safely accomplish the driving task because some event, activity, object, or person within or outside the vehicle compels or induces the driver's shifting attention away from the driving task. The presence of a triggering event distinguishes a distracted driver from one who is simply inattentive or ‘lost in thought.’” (2001).

In 2010, 4,871 crashes were recorded in NSW as a result of drivers using hand-held telephones, and distraction both inside and outside of the vehicle (Centre for Road Safety, Transport for NSW, 2011). A significant amount considering the crashes could be avoided through policy and law.

Driver distraction safety related problems are set to escalate with more technologies available for use in personal vehicles set to flood the market (Stutts, 2001).

“A crash-prone driver driving in a crash-prone scenario with risky behavior does not always lead to crashes. In fact, most crashes are preventable under dangerous situations, as long as the surrounding traffic is properly observed and adequate maneuvers are successfully executed” (Wong, 2011).

Wong's quote highlights the variety of conditions and complexity of environments whilst driving and the range of skill and experience the driver may possess. All which become irrelevant when a driver becomes distracted. The distraction of a driver inhibits them, rendering them unable to process their environment to the best of their abilities, thus the strong correlation between distraction and collision.

Factors that have been identified as non-contributing, can assist in the development of recommendation.



The increased environment complexity, such as roadside advertisements, does not affect all processes of driving performance (Horberry, 2005).

Age has not been determined as a factor in driver distraction, with stable results through the different age groups, although drivers above the age of 60 have been found to drive slower in complex driving scenarios to compensate for their slower reflex skills.

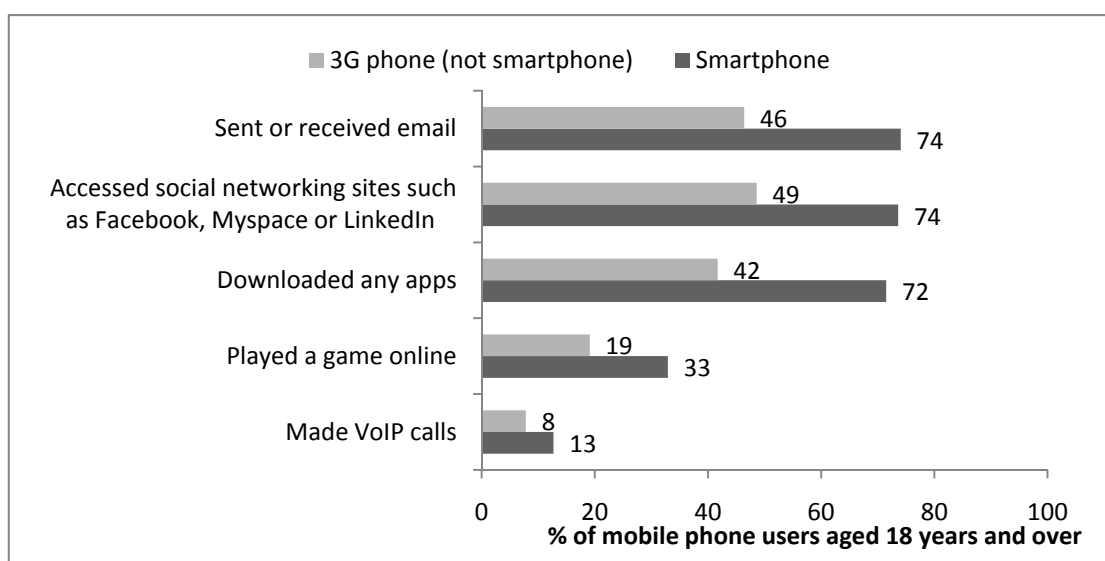
### 3.2 Current rates and future trends in take up of electronic devices, both by road users and vehicle manufacturers.

The Oxford Dictionary defines a Smartphone as “a mobile phone that is able to perform many of the functions of a computer, typically having a relatively large screen and an operating system capable of running general-purpose applications.” (Oxford Dictionary, 2012)

Australia is one of the world’s leading countries in ownership of smart phones. (IDC, 2011). More than a million units purchased each month in the year 2010. The current trends in the take-up of Smartphone’s are increasing yearly. Apple is dominating the market share from 15.9% in 2010 to a staggering 23.5% in 2011. As opposed to Nokia owning 27.6% of phones worldwide in 2010 and dropping to a mere 12.4% in 2011 (IDC, 2011).

People aged 18-44 years both male and female are the primary target market of mobile phones and they have reached 97-98% of the entire Australian mobile phone adoption rates. (ACMA, 2011).

The features on a Smartphone enable users to do undertake activities other than standard calls or text messaging:



(ACMA-commissioned consumer survey, 2011)

Portable global positioning systems (GPS) are devices that are able to pinpoint destinations and give directions through the signals of orbiting satellites (Oxford Dictionary, 2012)

The managing director of Garmin stated that 800,000 of Garmin GPS products alone were sold and being fitted into vehicles within a year. (Mawby, 2012).

Leading GPS companies are:

- Garmin
- Navman
- TomTom
- Navigon

“The Australian Design Rules (ADRs) are national standards for vehicle safety” (Department of Infrastructure and Transport, 2012). In the ADRs (3<sup>rd</sup> edition) there is no specific standard for in-car technologies such as:

- Entertainment units
- Climate control units
- Reverse backing camera
- Built in GPS scree

Electrics and electronics will remain the most important enabler of automotive innovations through 2015. More and more automotive functions become interlinked, e.g. indicators have volume control interlinked to allow the driver to adjust without manually touching the entrainment unit. (Wyman, 2007).

### **3.3 Regulatory means of enforcing harm minimisation caused by such devices.**

#### c) Regulatory means of enforcing harm minimisation caused by such devices

There are laws and regulations in New South Wales that aim to minimise harm caused by the use of electronic devices. It is illegal to use a hand-held mobile phone whilst driving a vehicle which includes;

- Making or receiving phone calls
  - Sending or receiving messages
  - Playing games
  - Or taking photos
- (NSW Government Transport Roads and Maritime Services 2011).

This also applies when the car has stopped but not parked and penalties currently include an ‘on-the-spot’ fine of \$234 and loss of 3 demerit points (TAC, 2012). These penalties increase if the offence occurs within a school zone (NSW Government Transport Roads and Maritime Services, 2011).

Using a hands-free device is legal (excluding Learner and P1 Provisional Drivers) but can be termed illegal if the use of such a device causes the driver to lose control of their vehicle which will carry the same penalties (NSW Government Transport Roads and Maritime Services, 2011). However, using a hand-free electronic device is still a risk for drivers as it is still a distraction; “studies have found that using a mobile phone while driving is dangerous as it slows reaction times and interferes with a driver’s perception skills and increases the chance of having a crash” (NSW Government Transport Roads and Maritime Services 2011). Physical and cognitive distraction through the use of a mobile phone can impair a driver’s;

- visual search patterns
- ability to maintain speed and position on the road
- ability to judge safe gaps in the traffic
- general awareness of other traffic.

(TAC 2012)

In-vehicle navigation such as GPS systems and audio/visual equipment such as DVD players and radios are also governed by regulations that are difficult to understand and enforce. According to the NRMA (2009) “Road Rule 297 (2) states: “A driver must not drive a motor vehicle unless the driver has a clear view of the road, and traffic, ahead, behind and to the side of the driver””. However, the NRMA (2009) also states that “There is also a rule, which in certain circumstances permits a driver to drive a motor vehicle with a visual display unit if it is, or is part of, a driver’s aid”, such as a GPS system. This rule does not specify where the system has to be fitted within the vehicle. This suggests that although a driver could be fined or lose demerit points if their vision is obscured by a navigation system, this would be hard to define and would be understood differently by each individual.

As well as these laws being debatable and difficult to enforce because of their ambiguity, laws and regulations regarding the use of hand-held electronic devices have not kept up with rapidly changing technology to cover iPods, iPads, Kindles, or laptops among many other new devices. Regulations also neglect to effectively control the use of in-vehicle devices such as entertainment units (i.e. sound systems), climate control units and reverse-backing cameras, which can all act as a distraction to drivers, increasing the probability of harm being caused to other drivers or pedestrians.

### **3.4 Technological solutions to managing the harmful consequences of distraction.**

Mobile phones play a vital role in our society. However, the convenience they offer must be judged against the hazards they pose, particularly when used while driving a vehicle. Text messaging, making and receiving calls all contribute to the problem of inattentive driving and to an increased risk of traffic accidents.

“World-wide, safety and health advocates are concerned about driver distraction, in particular distraction caused by the use of mobile phones, and consequently more than 40 countries restrict or prohibit the use of hand-held phones while driving. At the same time, automakers, service providers and high-tech companies are pushing forward to bring other potentially distracting services and gadgets, including access to the World Wide Web and e-mail, 3Dmaps/navigation and high-definition video, to the front seat” (Adolph 2010).

These and other in-vehicle information and communication services are delivered via original equipment manufacturer (OEM) components, automotive aftermarket devices (personal navigation devices, PND) and – rapidly gaining market share – smartphones.

Market research firm iSuppli suggests that smartphones have already become the most important platform for maps, navigation and other location-based services (LBS). According to iSuppli the number of smartphone-based navigation systems was 81 million in 2010 and expected to rise to 297 million in 2014 (iSuppli 2010).

‘Tasks, such as entering a destination into the route guidance system, need to be resumable (or ‘chunkable’. Users should be able to control the pace of interaction with the system and completing a desired task shall neither exceed a time limit nor adversely affect driving...\_These and other principles of sound basic ergonomics, as well as the interplay of in-vehicle information and communication systems with other in-car and driver assistance systems (e.g., adaptive cruise control, lane keeping assistance, collision warning) have been outlined in standards and guidelines issued by standards bodies and automobile organizations, including ISO (International Organization for Standardization), SAE International (Society of Automotive Engineers), the AAM (The Alliance of Automobile Manufacturers), JA-MA (Japan Automobile Manufacturers Association), and the UK’s Transport Research Laboratory’ (Adolph 2010).

## 4.0 Conclusion

The dominant distractions identified surround the use of mobile phones and in vehicles technologies. Australia is one of the world's leading countries in ownership of smart phones. Mobile phones play a vital role in our society. However, the convenience they offer must be judged against the hazards they pose, particularly when used while driving a vehicle as the harm driver distraction can cause is depicted in the current NSW crash rates. Other contributing factors include the predicted increase in driver distraction related harm as providers and high-tech companies developing and interlinking technology to broaden the markets, as a result electronics will remain the most important enabler of automotive innovation.

The recommendations proposed include further legislative reform. An emphasis is placed on the need to maintain relevance between legislation and technology in a bid to minimise direct danger for drivers and road users. . This impacts directly to Headstart as an organisation, as it is a part of Headstart's initiative to provide social rehabilitation for people with an Acquired Brain Injury. If strategies could be implemented to lower crash casualties and also lower the number of people sustaining brain injuries, this action needs to be taken immediately.

## 5.0 Recommendations

- The development of an advertising campaign to target drivers using telephones, GPS devices, audio systems. The campaign would focus on how 'easy' it may be to slip up and check that message you've been waiting for etc., but contrast such events with the worse-case scenario, E.g. collision (possibly fatal) or pedestrian run in.
- As research would indicate that the placement of road signs such as billboards on roadways does not impair concentration, the placement of billboards bearing slogans and images from an advertising campaign would be an effective way to target drivers.

Billboards would be effective because they directly target drivers, so the medium is not age specific, as the research shows that no great variation in distraction cases is a result of age.

- The development of public policy's and law to clearly state the limitations of technological gadgets in the car. Policy and the law needs to be updated to remain relevant to society's advancements in technology.
- The vehicle manufacturer should fit in-car electronic devices, to ensure a safer operation of these the vehicle and minimise driver distraction.
- Speech recognisable in-car technologies implemented by vehicle manufacturers and reform of ADR's.
- Current laws and regulations need to be revised and reworded to make them easier to define and enforce.
- New regulations need to be introduced to be further up-to-date with new technologies which may pose risks to drivers such as iPods and navigation systems within iPhones, as current regulations do not reflect the large role that these new technologies play within society. Regulations also need to be introduced regarding the use of in-vehicle systems such as reverse-backing cameras.

- More information needs to be available regarding laws and their subsequent penalties but also the risks drivers are taking by using electronic devices whilst driving – harm minimisation through education. This could be implemented through the RTA as part of the current licensing scheme.
- Further research into developing safer technology within new model car design.
- Funding for development of driver awareness and harsher policy on road user neglect.
- State and Federal government campaigning through advertising to encourage and promote safer road use and great community awareness of dangers of driver distraction through technology.

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