

Prevalence of Illegal Mobile Phone Use on Australian Roads

Alexander Jannink^a, Chris Kells^a, Andrew Matthews^a

^aAcusensus Pty Ltd

Abstract

This paper presents data and information on the prevalence of mobile phone use by drivers across road networks in Australia with the intent to inform enforcement strategies. The data for this study has been obtained by the deployment of fixed and mobile illegal mobile phone use detection cameras. The cameras surveil drivers at particular points on the road network. We find a consistent and high baseline rate of offending that matches closely results of naturalistic driving studies. We present the proportions of drivers using phones by hand, by vehicle type, by passenger count and by time of day.

Background, Method, Results and Conclusions

The illegal use of mobile phones while driving has grown to epidemic proportions on Australian roads and represents a major challenge for reducing road trauma. Despite all states and territories enacting laws banning handheld phone use while driving, it has proven difficult for the police to enforce these laws.

Acusensus has developed an innovative camera-based solution that provides authorities with a new tool to detect and deter illegal mobile phone use. A sensor system detects and records the presence and speed of all vehicles and a specialised camera system captures high-resolution evidence of phone use. The system can operate 24/7 in all weather conditions, while the cameras can be mounted on existing road infrastructure or operated from vehicles or mobile trailers. Key innovations in the solution involve the removal of glare from the images and the use of Machine Learning (“AI”) to automatically identify drivers using a phone illegally.

Method

Acusensus has deployed the camera solution at various roadways in Australia, from freeways to metropolitan arterials to regional roads. The solution can accurately detect the proportion of drivers who utilise a phone (illegally) while in motion, at any time of the day. Further analysis was conducted on those drivers identified to examine at what times of day drivers offended, in what way they used the phone (e.g. with one hand or with two), whether prevalence was higher in heavy or light vehicles, and whether drivers offended with passengers in the vehicle or not.

Results

Across deployments at 14 different locations, capturing 30 million 12MP images, Acusensus has observed:

- A camera solution could be devised to provide clear prosecutable evidence of a driver illegally using a phone for 95% of illegal usage by consistently removing glare from windcreens and showing the phone use in 12MP resolution.
- The rate of drivers using phones while at speed (60km/h to 100km/h) was fairly consistent across different locations, with an average of 1.9% of drivers illegally using a phone while transiting past any of the camera locations, with a minimum of 1.4% and maximum of 2.8%.

- The rate of drivers using phones was negatively correlated with the posted speed limit for a given location (i.e. drivers offended more frequently in the lower speed limit locations).
- Drivers were most likely to use their left hand to manipulate the phone (75%).
- Some drivers used a phone illegally with both hands (5%).
- Drivers used phones illegally at any time of the day or night, with only slight variances in offending rates – slightly lower in morning peak periods of 6am-9am and slightly higher in the evening period of 7pm-9pm.
- Highest volumes of phone offences per hour were found to occur between 4pm and 5pm.
- 15% of drivers using a mobile phone had a passenger in the vehicle.
- 15% of drivers using a mobile phone were operating a heavy vehicle.

Conclusions

The data indicates that the prevalence of illegal phone use is extensive and consistent. Further, the camera system can be relied on to provide prosecutable evidence of drivers using phones illegally.

The data shows that a very high number of drivers will be identified and ‘caught’ by the system, at volumes far exceeding those typically captured by speed enforcement cameras.

Drivers using a phone have a significantly higher risk of crashing, and this information can be used to inform authorities as to how address this dangerous behaviour from an enforcement policy perspective.