Submission No 24

INQUIRY INTO SPEED ZONING AND ITS IMPACT ON THE DEMERIT POINTS SCHEME

Organisation: Global Road Safety Solutions

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Submission to the
Parliament of NSW Joint Standing Committee on Road Safety
Inquiry into speed zoning and its impact on the demerit points scheme

By
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February, 2014

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For STAYSAFE

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Preamble

This submission is highly selective, only commenting on a selected set of the terms of reference where I may be able to make a contribution beyond the expert submissions the Committee will receive from the most credible organisations which represent real world practical experience combined with expertise in scientific analysis of evidence, such as TARS.

I also note that because I have moved to Adelaide to fulfil a large consulting contract with Global Road Safety Solutions, and because I am not employed in Government in NSW road safety, it will be very difficult for me to appear before the Committee.

Introduction

Speed and speeding are the most misunderstood contributors to road trauma in the western world. Many people sincerely believe that speeding (which is taken here to mean driving at a speed above the speed limit) is not a significant contributor to the road toll. A huge body of evidence shows that this is simply wrong[1], including compelling reviews of the evidence by the United Nations and the World Health Organisation[2]. A key source of this misunderstanding lies in the misrepresentation of the facts in the media.

Speeding is estimated to contribute to around 40% of the NSW road toll. However, it is certain that these figures are an under-estimate of the contribution of speeding to trauma in NSW, as in other states and countries. This is based on the experience of NSW and a number of countries that reductions in trauma achieved at locations of effective speed enforcement are larger than the original

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[1] For reviews, syntheses and direct evidence see for example:
Johnston, IR. 2004. Reducing injury from speed related road crashes. *Injury Prevention* 10(5):257-59.
D'Elia A, Newstead S and Cameron M, 2007. *Overall impact during 2001–2004 of Victorian speed-related package*, report 267, MUARC, Clayton, Victoria.
Doecke, SD. Kloeden, CN. McLean, AJ. 2011. *Casualty crash reductions from reducing various levels of speeding*. CASR076. Centre for Automotive Safety Research, Adelaide.
Kloeden CN, McLean AJ, Moore VM, Ponte G. 1997. *Travelling speed and the risk of crash involvement. Volumes 1 and 2* (CR172), Canberra: Federal Office of Road Safety, Department of Transport and Communications.
Kloeden CN, Ponte G, McLean AJ. 2004.Travelling speed and the risk of crash involvement on rural roads (CR204). Canberra: Australian Transport Safety Bureau,
Nilsson, G. 2004. *Traffic Safety Dimension and the Power Model to describe the Effect of Speed on Safety*, Lund Institute of Technology, Sweden.
Job, RFS. (2013). Pillar 1 Road Safety Management – Speed management. *Paper to the TRB Annual Meeting- TRB Sunday Workshop: Pivotal Role of Speed Management across the Five Road Safety Pillars, Washington DC, January 2013.*

[2] Global Road Safety Partnership (2008). *Speed Management: A road Safety Manual for decision makers and practitioners*. WHO/GRSP/United Nations: Geneva.

estimates of the contribution of speeding.[3]

We should resist the absurd claims that speeding alone does not cause crashes- it does. Speed increases both the severity of a crash and the probability of a crash occurring (through reducing capacity to stop in time; reducing manoeuvrability in evading a crash; making it impossible to negotiate curves and corners at speeds above those which simple physics will allow for the friction available; and causing others to misjudge gaps, for example by allowing pedestrians less gap to cross the road than expected because the vehicle is travelling above the speed limit).

Furthermore, even low level speeding is critical to road safety and thus we cannot make the convenient decision to focus our efforts on the high level speeders. The contribution of low level speeding to road trauma is large. By applying the known increased risk of a casualty crash or fatal crash for each speeding category to the number of drivers speeding in that category it is possible to compute the total contribution to road trauma of speeders in each speed category. This reveals that in NSW, low level speeding contributes 38% of speed related casualties (injuries and fatalities combined) and 76% of speed related fatalities[4]. Low level speeding is the single largest contributing category of speeding to road deaths, because it is such a common behaviour, comprising 78% of speeding vehicles in NSW and 88% in South Australia. Furthermore, data from actual crash investigations suggest that the computed contribution of 38% of casualties by low level speeding is an under-estimate, with 51% of speeding casualty crashes for which a speed could be estimated involving low level speeding in NSW. Applying the NSW data to the rest of Australia allows an estimate of the contribution of speeding to Australia's road toll. Speeding is involved in around 40% of fatalities (itself an under-estimate), and low level speeding contributes 76% of these (although there is evidence that the power model[5] on which this is based does not work the same way across road environments[6] and may apply more strongly for pedestrian crashes[7]). This means that low level speeding contributed to 30.4% of Australia's over 15,000 fatalities in the last decade to 2010[8], killing over 4,560 people. Of the approximately 300,000 people hospitalised with serious injuries in Australia over that decade[9],

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[3] Job, RFS. (2013). Pillar 1 Road Safety Management – Speed management. *Paper to the TRB Annual Meeting- TRB Sunday Workshop: Pivotal Role of Speed Management across the Five Road Safety Pillars, Washington DC, January 2013.*

[4] Gavin. A., Walker, E., Murdock, C., Graham, A., Fernandes, R., Job, R.F.S. 2010. Is a focus on low level speeding justified? Objective determination of the relative contributions of low and high level speeding to the road toll. *Proceedings of 2010 Australasian Road Safety Research, Policing and Education Conference, Canberra, September 2010.* Canberra: Commonwealth Department of Transport and Infrastructure.

[5] Nilsson, G. 2004. *Traffic Safety Dimension and the Power Model to describe the Effect of Speed on Safety*, Lund Institute of Technology, Sweden.

[6] Cameron, M. & Elvik, R. 2008. Nilsson's Power Model connecting speed and road trauma: Does it apply on urban roads? Proceedings of the Australasian Road Safety Research, Policing and Education Conference, Canberra.

[7] Leaf, WA and Preusser, DF. 2009. Literature Review on Vehicle Travel Speeds and Pedestrian Injuries. DOT HS 809 021 October 1999 Final Report. National Highway Traffic Safety Administration, U. S. Department of Transportation

[8] Australian Transport Council. 2011. *National Road Safety Strategy 2011-2020*. Australian Transport Council, Canberra.

[9] Australian Transport Council. 2011. *National Road Safety Strategy 2011-2020*. Australian Transport Council, Canberra.

around 13%[10] to 17%[11] involved speeding and 38% of those involved low level speeding, which thus contributed to around 45,000 serious injuries. Even leaving aside the devastating psychological suffering and social dislocation these losses occasion as well as the huge costs of property damage which cannot be accurately estimated for low level speeding, at adopting the crash costs estimated by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) in 2006 (allowing for a 10% inflation since then), low level speeding in Australia for the first decade of this century cost $22,631,400,000 (in 2012 Australian dollars).

The Manipulation of Truth

From a scientific point of view the interesting question is not whether speeding is a large contributor to the road toll (the evidence absolutely proves it is, and I know the committee will receive a number of submissions to this effect based soundly on actual evidence as well as the misguided and deliberately self-interested submissions claiming the opposite), but rather how the industries and vested interests in speeding (including those who find it a thrill or useful for saving time) have managed to keep the truth from being more broadly accepted. In this sense, misguided views about speeding have been even more successful than the tobacco industry in perpetuating claims that the evidence is not clear or that other factors (such as lack of car handling skills) are to blame. Those who promote such ignorant, misguided, or often self-interested views are the real mass murders of Australia. The massive road toll of deaths and serious injuries arising from speeding each year in Australia dramatically exceed the tragic mass shooting event at Port Arthur. In some cases the promotion of false views regarding speeding and cameras is a deliberate action by people knowing the truth to be different and in some cases it is murder by negligence by claims made without sufficient understanding or information to warrant offering comment.

I appreciate that people are entitled, and should be entitled, to their say. Yes, it is a free country and I will stand and defend the right of people to express their views regardless of how utterly wrong and harmful they are. I am also expressing the view—based on good evidence that these views are costing many losses of life and permanently ruined lives each year. We can lament the deliberate misrepresentation of the truth to the public or gross negligence in commenting on these matters so naively and harmfully. It is also noteworthy that the debate has managed to present the road safety experts as those with the vested interest, while the media earning large sums of money directly from car ads (promoting speed under various guises) present themselves as unbiased, though this is perhaps not surprising given that the debate is presented by the media as well as motoring journalists often taking one side in the debate.

The media often (though I note not uniformly- there are some excellent journalists working in the area) have by virtue of their irresponsible reporting, contributed directly to the deaths and horrific

[10] Australian Transport Council. 2011. *National Road Safety Strategy 2011-2020*. Australian Transport Council, Canberra.

[11] Gavin. A., Walker, E., Murdock, C., Graham, A., Fernandes, R., Job, R.F.S. 2010. Is a focus on low level speeding justified? Objective determination of the relative contributions of low and high level speeding to the road toll. *Proceedings of 2010 Australasian Road Safety Research, Policing and Education Conference, Canberra, September 2010.* Canberra: Commonwealth Department of Transport and Infrastructure.

injuries occasioned by speeding and the lack of effective control of it. The common argument is that they are presenting a balanced view. There are many areas of clear evidence where they choose not to follow this path in similar circumstances. Every story on space exploration does not note that some people believe that the moon is inhabited by underground beings, and every story on the holocaust does not include the claims that there was no holocaust. The claim that speeding is not a major contributor to the road toll is as baseless as the claims of no holocaust or beings living underground on the moon, yet almost every story on speeding includes the pro-speeding claim supposedly for balance. Often the pro-speeding lobby claim that the government is operating speed enforcement for revenue raising, yet no reporter has yet (to my knowledge) noted that the supposed road safety experts who often represent the pro-speed lobby are the motoring writers who make their living from reviewing the fast cars and how quickly it will accelerate (as well as other features). Their work is funded by the advertisements of the vehicle manufacturers who make the excessively fast cars and sell them on the basis of speed and "performance." There is a clear bias on the part of these pro-speed and anti-camera journalist advocates. I cannot know whether this vested interest by many in the pro-speed lobby is not noted by reporters because they also earn their living in part from the motoring advertising dollar, or whether they genuinely fail to see that this motivation should be aired by them as much as the supposed motivations of the experts defending speed enforcement.

Overall, there is a convenient conspiracy of silence, misinformation, unfunded claims being presented as fact, supporting a large motivation by many of those involved to keep speeding as part of the culture of road use in Australia (and elsewhere).

It is high time that Governments in Australia stopped being led by the loudest ignorant voices, and started to follow the evidence, that speed cameras save lives and serious injuries (again there are many sound pieces of scientific evidence for this, and the most credible organisations have reviewed the evidence and concluded that speed cameras save crashes and trauma, including the OECD[12], the World Health Organisation & the United Nations & the Global Road Safety Partnership[13] and the Cochrane Library[14]. However, the NSW Government should not be singled out for criticism on the basis of my comments here. In fact, to their credit in the last few years NSW has done more than most to address speeding. This has included:

1. The Government has supported policy to improve speed enforcement—a morally correct, and perhaps given the misinformation being promulgated, courageous decision.
2. The NSW Centre for Road Safety has done a great job, in the face of media coverage of deliberate and/or inadvertent misinformation, to defend the need to manage speeds and has managed the improvement of speed enforcement very well.
3. The reduced road toll in 2013, reflecting these successes.

[12] OECD. 2006. *Speed Management.* Report of the Transport Research Centre, ECMT Paris.

[13] Global Road Safety Partnership (2008). *Speed Management: A road Safety Manual for decision makers and practitioners.* WHO/GRSP/United Nations: Geneva.

[14] Wilson C, Willis C, Hendrikz JK, Le Brocque R, Bellamy N. 2010. *Speed cameras for the prevention of road traffic injuries and deaths.* Cochrane Database of Systematic Reviews, Issue 11.

The Naïve Assertion of Theory over Practical Real World Evidence

Many naïve theories will no doubt be advanced to the committee. These will include that speed management, lower speed limits and enforcement can cause more crashes, on the basis of a number of absurd claims. These include people look at their speedos too much and this causes more crashes; people take longer to get there and so are more fatigued; people need to learn more car handling skills. These are theories, and the evidence plainly proves them to be wrong. If they were correct speed cameras would not reduce serious crashes, yet they do. The NSW Ombudsman's Office report on the subject shows this is true in NSW as elsewhere.

On related notes, more car handling skill is generally associated with more crashes, not less, as shown by the higher crash rates of the most skilled drivers. Advanced or defensive car handling skills and motorcycle skills training have failed to deliver the expected road safety gains[15]. Licensed racing and rally car drivers have much higher crash rates on public roads than average drivers. Road safety is not a skill problem but a motivation problem—it is not what the driver can do but what they choose to do that counts. Choosing to speed adds to serious crash risk.

Fatigue should not be considered simply in terms of time driving. We fatigue faster with more effort, and driving faster demands more effort (more vigilance, more overtaking, more care to stay in the lane, more readiness for events) and thus fatigue sets in faster.

Speed Limit Reductions

Reducing speed limits does improve road safety, in NSW as elsewhere. The reduction of speed limit from 110km/h to 100km/h on the Great Western Highway led to a substantial reduction in serious crashes[16], and evaluations of the reduction of urban speed limits from 60km/h to 50km/h show large road safety benefits[17]. Again, the evidence from NSW and internationally is irrefutable, and simplistic theories such as people don't obey speed limits and so they have no effect are clearly proven wrong by the evidence that changing speed limits changes behaviour and thus improves safety.

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[15] Kardamanidis K, Martiniuk A, Ivers RQ, Stevenson MR, Thistlethwaite K (2010). Motorcycle rider training for the prevention of road traffic crashes (Review). *The Cochrane Library* 2010, Issue 10. Roberts IG. & Kwan I. (2008). School-based driver education for the prevention of traffic crashes (Review). Cochrane Library (Wiley).

[16] Bhatnagar Y., Saffron D., de Roos M. and Graham A. (2010) *Changes to speed limits and crash outcome - Great Western Highway case study*. In Proceedings of the 2010 Australasian Road Safety Research, Policing and Education Conference, 3l Aug - 3 Sep 2010, Canberra, Australian Capital Territory.

[17] Kloeden CN, Woolley JE, McLean AJ. A follow-up evaluation of the 50km/h default urban speed limit in South Australia. In *Proceedings of the Road Safety Research, Education and Policing Conference, Melbourne: Vicroads, 2007.*

Recommendations

1. We must increase the focus on so called low level speeding (within 10km of the speed limit) because the evidence (as above) shows that it is a major contributor to the road toll. Actions to address this should include:
    a. Reducing the enforcement tolerance on speeding, with clear advance warning of the change to the motoring public of NSW. (National surveys show that drivers in NSW anticipate larger tolerances on their speeding than drivers in any other state of Australia[18]).
    b. Increasing the demerit points for low level speeding to 2. (Despite naive academic claims to the contrary based on a narrow range of evidence, the evidence strongly supports the view that in NSW the demerit point scheme is working as a deterrent and in fact demerit points are a more effective deterrent than fines[19]. In addition, the changes made to P1 driver conditions in NSW in 2007 resulted in large reductions in deaths involving P1 drivers. The key change was a large reduction in speeding related fatal crashes, which can be directly attributed to the increase in demerit points for P1 drivers, which resulted in licence loss for speeding[20].)
2. Mobile and unmarked speed enforcement should be strongly supported through communications (including from Staysafe) and expanded. (We will only succeed in really managing speeding fatalities and serious injuries when drivers expect to be caught for speeding anywhere anytime, not just at predictable or signposted locations. This is because the vast majority of fatalities each year occur at locations where no fatality occurred the year before. Speeding adds seriously to crash risk anywhere- not just at black spots, and thus treating black spots alone is not enough).
3. Claims of inadvertent speeding should not be seen as an excuse for going soft on speed enforcement. Enforcement motivates more driver care to ensure traveling travelling within the limit. The evidence suggests that in the vast majority of cases drivers are speeding deliberately. Figure 1 below shows the 85th percentile speeds (the speed exceeded by 15% of drivers) around a speed camera in NSW and shows that speeding drivers speed and slow for the cameras and speed up again after the camera- deliberate speeding and deliberate slowing for the camera. (It should be noted that while this limits the length of road over which fixed signposted cameras are effective, they still substantially improve the road toll where they are installed).
4. Speed limits are often too high in NSW and the excuse that limits must be credible is patently absurd and harmful. We need more education to explain that speed limits will not necessarily be for reasons drivers can see, and we need to reduce many limits. (If drivers could see the

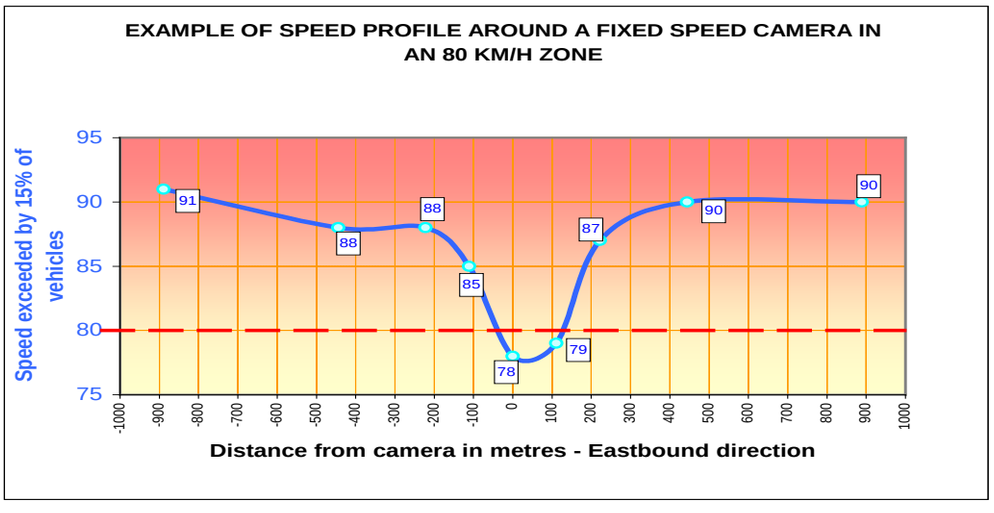
[18] Department of Infrastructure and Transport. 2011. Community attitudes to road safety – 2011 survey results. Department of infrastructure and Transport and the NRSC: Canberra. 2011.

[19] Morgan, G.A. & Job, RFS (1995). Red light cameras: drivers' knowledge, attitudes and behaviours. In D. Kenny & RFS Job (Eds.), *Australia's Adolescents: A Health Psychology Perspective.* (pp. 144-150). Armidale, NSW: New England University. This study showed that drivers estimates of demerit pints were a better predictor of deterrence than their estimate of fines, for red light running.

[20] Job, RFS. (2013), *Pillar 1 Road Safety Management – Speed management.* Paper to the TRB Annual Meeting- TRB Sunday Workshop: Pivotal Role of Speed Management across the Five Road Safety Pillars, Washington DC, January 2013.

right speed to drive we would not need speed limits or speed enforcement at all. We do need them. I have seen many instances of limits which I questioned only to find they were well justified by the crash rates, yet the risk was not apparent when driving the road.)

Figure 1: 85th percentile speeds recorded on approach and departure around a sign-posted speed camera in in an 80km/h speed limit in New South Wales



Conclusions

Speeding alone is a major cause of crashes. Speeding is a major contributor to the road toll, and even low level speeding (less than 10km/h over the speed limit) is a major contributor to deaths and serious injuries. Speed limit reductions, as well as speed enforcement including cameras combined with mass media promotion, are effective in reducing speeding and reducing deaths and serious injuries. I hope these brief comments are helpful.