

15 February 2019

National Transport Commission

Developing technology-neutral road rules for driver distraction

INTRODUCTION

1. EROAD is a technology company specialising in regulatory vehicle telematics, providing services in New Zealand and exporting services to New Zealand, Australia and the United States. Our submission comprises 3 parts:
 - Part 1: About EROAD, to help you understand our perspective
 - Part 2: General comments
 - Part 3: Responses to your specific questions.
2. We appreciate the opportunity to provide this submission. Representatives of EROAD are available to speak on the submission at your convenience.

PART 1: ABOUT EROAD

3. EROAD is a global leader in GNSS-based regulatory telematics, delivering a range of products and services leveraging a single in-cab device and web-accessed portal:
 - a. EROAD developed the first electronic distance-based charging system for gathering Road User Charges in New Zealand and managing off-road refunds.
 - i. This has since formed the basis for heavy vehicle charging pilots in Oregon, California, and along the I-95 Corridor in the Eastern United States.
 - ii. The technology also supports inter-jurisdictional tax reconciliation in North America (under the International Fuel Tax Agreement), and managing Fringe Benefit Tax and Fuel Tax Credit claims and reporting in Australia.
 - b. EROAD provides an electronic logbook in New Zealand certified by the NZ Transport Agency, and a third-party certified Electronic Logging Device that meets the standards mandated by the Federal Motor Carrier Safety Administration in the United States.
 - i. Work is underway to develop the system to meet the Electronic Work Diary requirements now operative in Australia.
 - ii. These products are supported by a range of driver safety and coaching tools, and the ability to integrate with fatigue monitoring systems.
 - c. EROAD offers a wide range of driver, vehicle, equipment, and fleet monitoring and business intelligence services.
4. If you would like to know more about EROAD, you can visit <https://www.eroad.com.au/>



PART 2: SUMMARY COMMENT ON THE MATTERS COVERED

General comment

5. EROAD supports this change in how distracted driving will be tackled. EROAD also supports action to ensure the law keeps up to date with the advancements in technology by better expressing the outcomes to be achieved rather than the specific technologies for achieving them.
6. We agree that it would be far more beneficial to legislate according to the function of technology, not the form, as this removes the problem when technological form changes. For example, it is an apparent absurdity that hand held mobile phones are not legal, but hand held CB radios are, when it is the act of focussing on a conversation that may be the most distracting thing.

PART 3: RESPONSES TO THE SPECIFIC QUESTIONS ASKED

Defining the driving task

Question 1: Does the proposed definition include all the key functions required to safely perform the driving task?

7. The definition might be more helpful if it unpacked the functions in a manner that more closely aligns to the tactical/operational distinction alluded to earlier in the paper. Alternatively, that conceptualisation could be rephrased slightly to distinguish technical and operational functions, where the former relate to the general ability to control a vehicle, and the latter to controlling it in the context of a journey. This could produce a list like this:

Technical functions	Operational functions
Knowing the road rules	Applying the road rules
Lateral motion control	Route finding
Longitudinal motion control	Route following
Monitoring vehicle performance	Monitoring the driving environment
Vehicle equipment control	Anticipating situational events
	Responding to situational events
	Planning manoeuvres
	Signalling intentions
	Executing manoeuvres

8. In respect of the additional functions or examples suggested above, a key differentiator between safe and unsafe drivers is the ability of a driver to anticipate potential hazards ahead, behind, and to the side of the vehicle. Where one can anticipate by assessing the near, mid



and far distances, and alter the driving accordingly, many incidents can be avoided. We strongly recommend that the need to anticipate is included.

9. We note the importance of monitoring the driving environment and the interaction with other road users. The roads are driven in relation to other people and it is the interaction that presents a risk. Watching and interpreting the actions of other road users or pedestrians is an important aspect of incident prevention.
10. We note also that the very functions involved in driving can be distractions in their own right. For example, to the extent that a person has not mastered the technical functions – say they fumble a gear change while moving within heavy traffic – they are then already in a severely distracted state relative to the demands of properly executing the operational functions.

A common definition of driver distraction

Question 2: Does the proposed definition capture all the behaviours that lead to driver distraction and a reduction in driving performance?

11. The definition is good, provided the issues on voluntary and involuntary distractions are carefully worked through.
12. One has to be careful about defining voluntary and involuntary distractions. The spilled coffee example is a situation that has been created by the driver holding the cup of coffee. The screaming baby can be ignored if concentrating on driving. These examples demonstrate that many issues which may appear as involuntary could be classified as voluntary or self-perpetuated.
13. The importance of the action of driving has been lost. Driving well involves attention, skill and anticipation. Some people see 'driving' as a necessary evil which gets in the way of their social or business dealings. This needs to change and swiftly as it leads them to being more susceptible to building a certain level of distraction into their manner of driving.
14. In social science in general, and criminology in particular, the language of risk factors distinguishes between static, dynamic and situational risk (and protective) factors:
 - a. Static factors do not change 'in the moment', e.g. the strategic purpose behind a specific trip, or the make and model of the vehicle, or the configuration of onboard equipment.
 - b. Dynamic factors evolve over time, e.g. driver experience, attitudes to phone use, a preference for having a coffee while driving, and vehicle condition.
 - c. Situational factors are things present in the moment, e.g. a phone ringing, a sudden downpour, or the actions of another road user.
15. This sort of framework can help properly differentiate risk factors based on to what extent they may be amenable to change, what the ideal intervention point is, and what mitigations might be needed if that intervention point has been passed (in any given circumstance).



Types of driver distraction

Question 3: How could a distinction between manageable and unmanageable levels of driver distraction be used to inform the way distraction is regulated? What evidence-based distinctions could be considered?

16. As with voluntary-involuntary distraction, the risk factor model could also be usefully integrated with – or better yet, used to replace – the more general idea of manageable and unmanageable distractions. Both the voluntary-involuntary and manageable-unmanageable constructs have the problem of implying a certain degree of blamelessness or helplessness in the face of distraction.
17. A difficulty with distraction is that, so long as humans are driving, they are prone to distraction. Yet, as the statistics provided in the problem definition show, the conversion rate from a moment of distraction into an actual harmful event is extremely low. This creates a high likelihood of complacency, in a context where most people already rate themselves as above-average drivers.
18. Nonetheless, while there may be a certain inevitability of drivers experiencing distraction, all distraction is manageable to some degree: it becomes unmanageable only once the management points for it have been bypassed, or they are out of reach for a particular driver or class of drivers (e.g. due to rationing or affordability issues).
19. Consequently, we consider that the following quote referenced in the issues paper should be approached with some caution:

Secondary activities that place little demand on drivers may be successfully time-shared with the driving task, resulting in little or no reduction in driving performance (Young and Regan, 2007)
20. Taking this as a rule of thumb could be detrimental: what is the definition of 'little'? Does this kind of message give the dominant driver culture the right kind of encouragement or push?
21. Similarly, one has to be careful in arguing that because something is legal, or commonplace, that it is then also acceptable. The point of this review is to ensure the law is up to date with technology and modern society.
22. Smoking, for instance, is a big issue for distraction. In many countries it has been banned in work vehicles, and it can create a hazard through the distractions of lighting the cigarette, smoking the cigarette, disposing of the ash, and then disposing of the butt. E-cigarettes generate significant amounts of vapour clouds which can obscure a driver's vision on the road ahead which can be hazardous even for a second or two.

Clear and consistent approach in the Australian Road Rules

Question 4: Should conventional and technology-based causes of distraction be treated equally in the Australian Road Rules? Why?

23. The two classes of causes of distraction should not be treated equally, but equitably, with reference to attaining the same final outcome. They should be approached with due care for how they present and play out.



24. For example, one has to be careful with regard to technology as many of the new technologies will benefit driving standards. The wording of any law or regulation has to reflect this and should emphasise the performance expectations, rather than technical prescriptions, to prevent it needing updating each time technology hits a new threshold.
25. The old distractions of food, smoking, phones etc, will always be the same and so can be far more controlled by legislation that will not need changing. Even here, though, there is a question to ask about how to encourage continuous improvement and culture shift given the challenges of achieving effective monitoring and enforcement.

Responsibility for distraction

Question 5: Can you provide examples of effective non-regulatory approaches to driver distraction that assist drivers to self-regulate their behaviour in a dynamic driving environment?

26. The EROAD Ehubo 2 telematics system has been designed to support the driver's behaviours while not being a distraction. It has a driver facing-screen but the speed read out and reliance on colour change to indicate a speed infringement means a driver can benefit from the advice but without more than a peripheral or cursory glance. This is supported by an audible alarm to further use the driver's other sense of hearing. Good driving results in no alarms and a better driving culture.
27. Noting the considerable section in the issues paper on technology for commercial drivers (pp18-19), the EROAD Ehubo2 is a portal to a range of task-supporting services, including receiving messages from their depot or scheduler. However, the driver is unable to access these while the vehicle is moving, so is required to exit the flow of traffic and pull over before doing so.
28. Drivers who are concentrating on the roads are far less likely to have to brake harshly as they have anticipated the changes ahead and hazards. Although this does not account for every eventuality (like a dog running into the road) we believe the drivers who are less distracted have far better driving performance. The EROAD Ehubo2 telematics system identifies possible driver distraction via their harsh braking and sharp acceleration performance. This information is captured and made available to support structured coaching or reflection once the driver is back at their depot.
29. Placing the examples above into the risk factor framework, installation of an Ehubo2 is a static factor that supports better situational performance through fewer inherent distractions, while also influencing over time the dynamic variable of the driver's underlying driving attitudes and behaviour. However, the example is not entirely 'non-regulatory': the Ehubo2 was designed to reflect general regulatory requirements to avoid obscuring the driver's view out the front windscreen or positioning the device so that it would interfere with other systems, like cooling vents, and to place it for easy access by enforcement officers. These restrictions needed to be performance based because the range of vehicle interior designs made prescription impractical.

Shared responsibility

Question 6: Can you provide examples of strategies successfully implemented by other international jurisdictions and industries (for example, aviation) that could be applicable to driver distraction?

30. No.



The concept of chain of responsibility

Question 7: Are there other parties besides the vehicle driver who can influence the risk of driver distraction? If so, are there mechanisms to ensure those parties are doing all that is reasonably practicable to ensure safety?

31. The driver can be distracted by any other party that chooses to interact with the driver when s/he is engaged with driving by any communication means that he has in the cab. This could be from within their company, or from the customer chasing a delivery. The driver could be distracted in consequence of an altercation with the loaders or another driver at their depot.
32. Given that distraction presents a known health and safety risk, then all parties within the existing heavy vehicle chain of responsibility are already exposed to being tested for their contribution to any event. Whether they are culpable and to what degree seems to be something that can only be determined case-by-case, and it seems imprudent to narrow the range of parties covered.
33. While the issues paper provides examples of distractions that arise from outside the heavy vehicle chain of responsibility – e.g. roadside billboard operators – it seems excessive to bring them into the chain as such. It does raise the question of the degree to which road managers and local planning and consenting bodies, in the example of billboards, necessarily consider road safety impacts when allowing such billboards. At a system level, the question is to what extent the impacts of these wider variables are assessed, recorded, and then subjected to meta-analysis so as to provide evidence of their harm or otherwise.
34. Given the state of research into distraction, formalising a wider chain of responsibility may best be deferred in favour of resourcing more systematic research.
35. However, there may also be value in ensuring that the basic chain of responsibility is applied to other categories of working drivers, including drivers of light vehicles.

Technologies that can assist with (and distract from) the driving task

Question 8: Can you provide examples of effective strategies for ensuring that new in-vehicle technology and mobile apps minimise driver distraction?

36. See the prior answer to question 5 (paragraphs 26-29). These examples reflect a choice by EROAD to ensure our products are unobtrusive by design.

Transition towards automation

Question 9: Can you provide examples of strategies to ensure that users of partially automated vehicles are fully informed about their responsibilities, and the limitations of their vehicle's technology?

37. No.



Prescriptive and performance-based approach to regulation

Question 10: What evidence is available in support of a performance-based approach or a prescriptive approach for managing the risks of driver distraction?

38. EROAD is not aware of any studies specifically comparing the two approaches.
39. In change management terms, distraction is an issue where determining the true nature of the problem is not able to be defined alone and imposed, but must involve a high degree of participation by the target population. Similarly, there is no single, objectively 'right' intervention that can be imposed: rather a mix of interventions needs to be negotiated and co-produced by the regulator and the target population.
40. We consider that the nature of the problem suggests a combination of performance-based and prescriptive approaches will be needed, with greater emphasis on the performance-based components. For example, it would be possible to prescribe the use of regulatory telematics by certain vehicle (heavy) or fleet (commercial) types. However, getting the full value of these would involve trial, error and innovation by telematics providers, training, practice and habit by drivers; and smarter, more responsive monitoring and enforcement by the regulator, with clear and frank communication between all three parties to reveal best practices, propagate them, and engender continuous improvements.

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