



Bryce Prosser
General Manager
Corporate Affairs & Communications

485 Bourke Street
Melbourne
Victoria 3000 Australia
bryce_prosser@racv.com.au
Tel: 03 9703 6103

Wednesday, 4 September 2019

Attn: Luis Gutiérrez
Safety and Productivity Team
National Transport Commission
Level 3/ 600 Bourke Street
MELBOURNE VIC 3000

Dear Mr Gutiérrez

Please find enclosed RACV's submission to the National Transport Commission's consultation regulation impact statement for *Developing Technology-Neutral Road Rules for Driver Distraction*.

If you would like to discuss this submission further, please contact Melinda Spiteri, Manager Safety & Education on 03 9703 6671 or Melinda_spiteri@racv.com.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Bryce Prosser', is written over a faint blue circular stamp.

BRYCE PROSSER
GENERAL MANAGER, CORPORATE AFFAIRS AND COMMUNICATIONS

RACV Submission to NTC Consultation Regulation Impact Statement

Developing Technology-Neutral Road Rules for Driver Distraction

Introduction

RACV welcomes the opportunity to respond to the NTC's Consultation Regulation Impact Statement (RIS) for *Developing Technology-Neutral Road Rules for Driver Distraction*.

With more than 2.2 million members, RACV is a household name and a highly trusted organisation. We have long represented our members on motoring, transport and road safety issues, advocating on their behalf, and expressing their views to both government and stakeholders.

RACV supports this review and update of the Australian Road Rules pertaining to driver distraction. With continuous innovation and development of new technology, this project is an important step in ensuring that driver distraction rules stay relevant and focus on the behaviours instead of devices that affect driving performance. It is also a good opportunity to provide more clarity to road users and enforcement agencies about what driver distraction and compliance is, and to achieve greater consistency on these rules across jurisdictions.

RACV supports the proposed hybrid approach as the best and most effective option for regulating driver distraction, especially when it is implemented alongside widespread driver education and other vehicle, fleet and technological regulations that aim to curb distracting behaviours while driving.

Question 1: What other factors should be considered in the problem statement?

RACV believes that the problem statement covers the appropriate factors. It explains how the technological-specificity of the current rules regarding driver distraction is outdated and lacks clear guidance for enforcement agencies and drivers on compliance and driver distraction.

More fundamentally, the current road rules send an inaccurate message that driver distraction is defined by certain devices, instead of the behaviour of the individual that leads to attention being taken away from the driving task. As noted in the problem statement, drivers typically believe that their driving is not impaired when they divert their attention to non-driving related tasks, despite understanding the general dangers of distracted driving. Such decisions are propelled less by skills and knowledge, but by psychosocial factors.

Thus, enforcement of the road rules will not wholly correct the mismatch between drivers' attitude towards distracted driving and their distracted behaviour while driving. Consideration must be given to public education to accompany the road rule changes to reshape drivers' cognitive risk-reward decisions to engage in distracting behaviour while driving.

Question 2: Has the consultation RIS provided enough evidence to support the case for government intervention? What else should be considered and why?

RACV believes the RIS presents good evidence to support the case for government intervention.

Question 3: Are there issues relevant to developing technology-neutral road rules for driver distraction not covered by the process for addressing the problem?

RACV acknowledges the project focuses on behaviour resulting from voluntarily-engaged distracting activities performed by drivers and riders. However, the potential of technology-neutral road rules to address the problem of driver distraction is fully harnessed when a systems approach is applied, which identifies all components beyond the driver that influences driver distraction. All drivers are susceptible to lapses in self-regulation to avoid driver distraction. Thus, it is equally important that regulations and guidelines for more macro-level influences of driver distraction (e.g. technology design, human-machine interface design, fleet policies) are critically researched and developed to ensure drivers are maximally enabled to avoid engaging in distracting behaviours.

Question 4: Can you provide evidence that would support a different treatment for cyclist distraction?

RACV supports the NTC approach that the options in the RIS should apply to drivers and cyclists. As vulnerable road users lack the physical protection of their vehicle, a cyclist would be more likely than a driver to be seriously injured if a crash occurs when they are distracted and lack proper control of their bicycle.

RACV further suggests consideration should be given to additional regulations relating to auditory distractions for cyclists and drivers. While the current rules proposed focus on an evidence-based selection of high-risk interactions (e.g. visual-manual interactions), the role of auditory distraction might be of particular concern for cyclists. For instance, a Boston study demonstrated that cyclists tended to engage more in auditory distractions (e.g. listening to audio stimuli through ear buds/phones in or on ears) compared to visual/tactile distractions (e.g. electronic device or other object in hand; Wolfe et al. 2016).

Additionally, studies globally have demonstrated that the use of earphones for non-driving related auditory engagement such as music leads cyclists to be more distracted and degrades cycling performance. In particular, auditory perception decreased when listening to music which made it more likely for them to miss driving-related auditory signals such as bicycle bells and car honks, especially if they were listening to music of higher volume and tempo or through both earphones instead of one (de Waard et al., 2011; de Waard et al., 2014; Stelling-Konczak et al., 2015). While some studies suggest music may be less or not distracting compared to other more attention-demanding technological interactions such as phoning, texting or searching for information (de Waard et al., 2010; Bellinger et al., 2009; Goldenbeld et al., 2012), cyclists still self-reported that they experienced higher risk while listening to music (de Waard et al., 2010).

Thus, the consideration of additional regulations relating to auditory distractions would allow the relevant road users to feel and be safer on the roads. The application of such a rule regulating auditory distraction (using headphones/earphones) while cycling would depend on where the cyclist is riding (e.g. on the road, shared path, or bicycle path).

As regulations and guidelines around driver distraction improve, it would also be important to consider how distractions for pedestrians and riders of mobility devices (e.g. mobility scooter, e-scooters) can be better managed, especially at areas where they interact with drivers and riders on the roads.

Question 5: Do the proposed examples for proper control reduce the uncertainty about compliance with the offence in road rule 297(1)? What other elements do you think could be incorporated?

RACV believes that the proposed examples of proper control, which are based on the key functions of the driving task defined in the RIS, could reduce uncertainty about compliance with the offence in road rule 297(1).

However, RACV would like to further emphasise that regardless of what examples for proper control are included in the revised road rules regarding driver distraction, all elements need to be in simple language that is easily understandable to the general public and enforcement personnel. Easy comprehension of the rules would help to provide clearer guidance on what compliance looks like. It would also better convey the key message that behavioural interaction and consequences, not technological distractions, are the focus of the regulations surrounding driver distraction.

Question 6: Are the four options clearly described? If not, please describe the areas that may be missing.

Generally, the four options (status quo, prescriptive, performance-based, hybrid) and the guiding principles for these options are clearly described.

Question 7: Is the status quo option an accurate representation of the current state of the Australian Road Rules in relation to driver distraction? If not, please describe further.

Yes, RACV believes this is an accurate representation.

Question 8: Are there any high-risk distracting behaviours and interactions that have not been addressed by the proposed new offences?

It would be useful to consider visual or manual interactions with appropriately mounted electronic devices that occur for an extended period such that the drivers' eyes are taken off the road for a significant time. Drivers' aids that can be used compliantly (e.g. navigational devices, music apps) can malfunction, and are at times not user-friendly and confusing. This can be dangerously distracting because the driver is likely to then to spend more time interacting with the device to rectify the problems, which would take their eyes off the road.

Such an interaction would be regulated by modified Rule 300 which would explain that drivers should have proper control of the vehicle, but only when drivers – as a consequence of the interaction – fail to maintain proper control. To take a preventative approach, the prescriptive rules (or the examples given in the rules) should be developed in a manner that reflects the potential danger of extensively performing a compliant interaction in a way that is significantly distracting.

Lastly, more consideration should be given to how conventional distractions are addressed in the phrasing of the rules. The word "device" elicits connotations of technological gadgets. The terms 'printed material' and 'non-electronic devices' do not sufficiently encompass conventional distractions as some items such as food, drinks, cigarettes, and grooming objects. Thus, it would be useful to investigate the risks of various potentially distracting

visual and manual interactions with conventional items. Naturalistic driving studies of driver distraction would be particularly informative. These considerations would inform the wording and examples given for visual and visual-manual interactions with non-electronic objects.

Question 9: Can you propose an alternative approach for discouraging long eyeglances off the roadway that is enforceable in practice?

RACV does not have an alternative approach for discouraging long eyeglances off the roadway that is enforceable in practice. For the hybrid option, we agree with the exclusion of the suggested offence for drivers who take their eyes off the road for more than two seconds. This offence would be difficult to enforce and may lead to the erroneous penalising of compliant behaviour.

Due to the impracticality of government regulation for this issue, a softer approach of education would be more appropriate. This approach would require a systems approach that simultaneously considers factors broader than that of the responsibility of the driver. Broader factors such as guidelines for in-vehicle technology and vehicle design, appropriate fleet policies, and driver education programs would also be required to support and implement this softer approach.

Question 10: Can you propose an alternative approach for discouraging high-risk voice-based interactions that is enforceable in practice?

Similar to our response to Question 9, given that any prescriptive ban of voice controls present significant enforcement challenges, effectively discouraging high-risk voice-based interactions would require a softer non-regulatory approach which encourages education and self-regulation.

Broader factors regarding the design and standards for voice-control technology will have to be considered. Current research shows that voice-command technology in the vehicle does not fully eliminate visual interactions and can induce high cognitive workload that can make the voice-based interaction high-risk (Strayer et al., 2016). Voice user interfaces can also be challenging to use due to inadequate accuracy, speech recognition and reliability (Cowan et al., 2019). When the use of such technology is challenging, drivers tend to adopt a range of tactics to overcome the obstacle, which can cause frustration and confusion (Myer et al., 2018).

Though many of such studies do not focus on voice-user interface interactions performed specifically while driving, the issues with current technology identified could lead to high-risk voice-based interactions with voice-user interfaces for drivers. This emphasises a need for rules and guidelines to ensure voice-user interfaces of electronic devices and in-vehicle technology meet a minimum standard to ensure any such technology available in the market meet a specified functionality threshold, and are safe, easy and reliable to use.

Question 11: Would a fully outcomes-based approach effectively mitigate the safety risks from diverse sources of distraction?

A fully outcomes-based approach would not be able to effectively mitigate the safety risks from diverse sources of distraction. This approach focuses on the consequences of drivers' behaviour; theoretically, all behaviours and interactions – regardless of risk – would be

compliant unless they impair a drivers' ability to maintain proper control of the vehicle. In such situations, a fully outcomes-based approach would not prevent the distracting interaction, and can only be used after the consequences of these interactions (i.e. not having proper control) manifest and pose a risk to the driver and other road users.

Furthermore, evidence shows that a large proportion of drivers demonstrate an inflated sense of self-efficacy of their driving (Hill et al., 2015; Horrey et al., 2015; Watson & Strayer, 2010). This means that drivers are likely to engage in behaviours that pose a risk of distraction because they perceive themselves to be able to maintain proper control while engaging in such distracting interactions, which makes a fully outcomes-based approach more problematic.

Therefore, a hybrid option which integrates this outcomes-based approach with some prescriptive conditions would be more appropriate because prescriptive conditions would give drivers an indication about the types of behaviours and interactions that should be avoided.

Question 12: Does the proposed combination of prescriptive and performance-based components in the hybrid option sufficiently address all the sources of distraction that can significantly reduce driver performance? If not, please elaborate.

RACV believes the hybrid option that combines the advantages of the prescriptive and performance-based approaches will best address driver distraction.

Question 13: Do you agree with the impact categories and assessment criteria? If not, what additional impact categories or assessment criteria should be included?

RACV has no further suggestions on the impact categories and assessment criteria.

Question 14: Does our analysis accurately assess the road safety benefits for each reform option? Please provide any further information or data that may help to clearly describe or quantify the road safety benefits.

RACV acknowledges that it is challenging to quantify the cost-benefit analysis of regulatory options for driver distraction without being overly speculative due to the lack of definition and data for this topic. Nevertheless, more thorough research and analyses needs to be done to achieve an accurate quantitative assessment.

For example, across all assessment criteria, the percentages of impact increase/decrease for each option relative to the status quo – also for the status quo in relation to the absence of rules – are assumed and the basis of these assumptions are not clearly explained. If there is insufficient existing data to support the claim, the assumptions should be based on more robust research theories (e.g. legal, behavioural, psychological theories).

Some instances of these unsupported assumptions include:

- “it is assumed that 20 per cent [of crashes caused by driver distraction] are related to technology use (6 per cent higher than the NHTSA study’s estimate of accidents related to mobile phone use)” (p. 76)

- “For the purposes of establishing an indicative estimate of the reduction of technology-based distraction incidents we have assumed that technological related crashes would be 24 per cent higher in the absence of existing laws. This is considerably lower than the higher estimates from the American studies of similar laws.” (p. 77)
- All assumed low and high impact thresholds and the corresponding assumed impact increases/decreases.

Specifically about the first assumption listed, the NHTSA study that was cited states that 9% of the total crashes in their 2017 data were distracted affected, among which 14% were due to mobile phone use. It would not be appropriate to assume that the 14 per cent is reflective of the proportion of crashes due to technology use, because this statistic does not include people who were using other technological devices such as in-vehicle systems and GPS.

Another issue that could have hindered accurate analyses for the road safety benefits is the data used to produce indicative costs of distraction-related accidents (p. 76). Footnotes to Table 7 (p. 76) state that fatal crash numbers are based on a five-year average from BITRE data, and injury numbers are based on an Austroads study estimating the number of fatalities and injuries numbers from crashes from 2009 to 2013, with the BITRE fatality crash data from that period subtracted.

Estimates used should ideally from an integrated source. Furthermore, given the growing use of technology, the speed at which technology and vehicle user interfaces evolve, and the changing trends in road trauma, the data used in the impact assessment should be as recent as possible to reflect the most relevant circumstances. BITRE provides data for both fatalities and hospitalised injuries, that are more recent (the latest being 2016 to 2018 depending on the variables of interest; BITRE, 2019). Such a source would be more appropriate to perform an accurate cost-benefit analysis.

Lastly, the estimated percentages of private and business vehicles requiring purchase of phone mounts (p. 88) and the estimated percentage of couriers requiring purchase of voice navigational systems (p. 89) require more support. Though RACV does not have any further information or data to provide to improve this analysis, we believe it would be worth reviewing these numbers to ensure they are truly reflective of the current driver distraction landscape.

Question 15: Is the assumption that technology related distraction crashes would be 24 per cent higher in the absence of existing laws plausible? If not, can you provide any evidence that supports a different estimate?

RACV acknowledges that in light of the sparsity of good quality research regarding the effectiveness of driver distraction regulations, the effectiveness of the existing Australian road rules would be difficult to estimate.

RACV cannot comment on the plausibility of the 24 per cent reduction in the absence of existing laws as there is a lack of justification provided for this estimate. Additionally, the higher estimates from the American studies of similar laws that the 24% estimate is stated to be based on does not seem to be referenced.

Question 16: Has the consultation RIS captured the relevant individuals or groups that may be significantly affected by each of the options? Who else would you include and why?

RACV agrees all drivers should be treated equally with regards to the rules pertaining to driver distraction because all drivers can be affected by driver distraction. Commercial drivers (e.g. heavy vehicle drivers, bus drivers, on-demand transport drivers) are possibly more susceptible to the risks of driver distraction as they may be driving for longer and with higher workloads. Thus, it would not be acceptable that exemptions from driver distraction regulations are made for commercial drivers to accommodate commercial operations.

Question 17: Has the consultation RIS used an appropriate analytical method for assessing the benefits and costs of the options? What else should be considered?

As mentioned in Question 15, RACV understands it is challenging to evaluate the costs and benefits of the options given the absence of good research and real-world counterfactuals. In light of this and the issues raised in our responses to Question 14-16, a qualitative assessment would have been more appropriate. A more critical and systematic analysis of the existing literature about driver distraction laws and guidelines would also be beneficial.

Question 18: On balance, do you agree that the preferred option best addresses the identified problem? If not, which option do you support?

The redevelopment of these road rules to be more technology-neutral is a welcomed opportunity to align all Australian states and jurisdictions for the purposes of consistency and clarity as to what driver distraction and attention looks like.

RACV agrees that the preferred hybrid option is the best among the given options for addressing the problem of driver distraction in a technology-neutral way, even if interactions not specifically prohibited can only be regulated based on the consequences of distracted driving instead of the prevention of distracting behaviours. The structure and wording of the new rules, scheduled for mid-2020, would also allow for a better understanding of how the hybrid option would be executed in practice.

Currently, the lack of substantive driver distraction data restricts the quality of the impact assessment. Thus, more research and a post hoc evaluation after the implementation of the new rules would be beneficial.

More broadly, it is important that a safe systems approach is adopted to tackle driver distraction. Besides regulating driver behaviour via the road rules, factors external to the driver also need to be addressed. Design rules and performance standards for in-vehicle technology and drivers' aids to ensure that the human-machine interfaces in the direct driving environment are designed to be minimally distracting. Organisations will fleet drivers also need to ensure safe driving policies, including those pertaining to driver distraction, are successfully implemented to keep business drivers safe.

Non-regulatory approaches such as education and awareness campaigns which promote and assist self-regulation of driver distraction for private drivers, business drivers, and enforcement agencies are also integral. Any regulations implemented should as straightforward as possible to facilitate understanding of the rules and the implementation of safe driving practices.

References

- Bellinger, D. B., Budde, B. M., Machida, M., Richardson, G. B., & Berg, W. P. (2009). The effect of cellular telephone conversation and music listening on response time in braking. *Transportation Research Part F: Traffic Psychology and Behaviour*, 12(6), 441-451. DOI: 10.1016/j.trf.2009.08.007
- Cowan, B. R., Pantidi, N., Coyle, D., Morrissey, K., Clarke, P., Al-Shehri, S., Earley, D. and Bandeira, N. (2017). "What can I help you with?": infrequent users' experiences of intelligent personal assistants. *MobileHCI '17: Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services, Vienna, Austria, 4-7 September*. DOI: 10.1145/3098279.3098539
- De Waard, D., Schepers, P., Ormel, W., & Brookhuis, K. (2010). Mobile phone use while cycling: incidence and effects on behaviour and safety. *Ergonomics*, 53(1), 30-42. DOI: 10.1080/00140130903381180.
- De Waard, D., Edlinger, K., & Brookhuis, K. (2011). Effects of listening to music, and of using a handheld and handsfree telephone on cycling behaviour. *Transportation Research Part F: Traffic Psychology and Behaviour*, 14(6). 626-637. DOI: 10.1016/j.trf.2011.07.001
- De Waard, D., Lewis-Evans, B., Jelijs, B., Tucha, O., & Brookhuis, K. (2014). The effects of operating a touch screen smartphone and other common activities performed while bicycling on cycling behaviour. *Transportation Research Part F*, 22, 196-206.
- Goldenbeld, C., Houtenbos, M., Ehlers, E., & de Waard., D. (2012). The use and risk of portable electronic devices while cycling among different age groups. *Journal of Safety Research*, 43(1), 1-8. DOI: 10.1016/j.jsr.2011.08.007
- Hill, L., Rybar, J., Styer, T., Fram, E., Merchant, G., & Eastman, A. (2015). Prevalence of and attitudes about distracted driving in college students. *Traffic Injury Prevention*, 16(4), 362-367. DOI: 10.1080/15389588.2014.949340
- Horrey, W. J., Lesch, M. F., Mitsopoulos-Rubens, E., & Lee, J. D. (2015). Calibration of skill and judgement in driving: development of a conceptual framework and the implications for road safety. *Accident Analysis & Prevention*, 76, 25-33. DOI: 10.1016/j.aap.2014.12.017
- Myers, C., Furqan, A., Nebolsky, J., Caro, K., & Zhu, J. (2018). Patterns for how users overcome obstacles in voice user interfaces. CHI'18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Montreal QC, Canada, 21-26 April. DOI: 10.1145/3173574.3173580
- Stelling-Konczak, A., Hagenzieker, M. P., & Van Wee, B. (2015). Traffic sounds and cycling safety: the use of electronic devices by cyclists and the quietness of hybrid and electric cars. *Transport Reviews*, 35(4), 422-444. DOI: 10.1080/01441647.2015.1017750
- Strayer, D. L., Cooper, J. M., Turrill, J., Coleman, J. R., & Hopman, R. J. (2016). Talking to your car can drive you to distraction. *Cognitive Research: Principles and Implications*, 1(16), 1-17. DOI: 10.1186/s41235-016-0018-3
- Watson, J. M., & Strayer, D. L. (2010). Supertaskers: profiles in extraordinary multitasking ability. *Psychonomic Bulletin and Review*, 17(4), 479-485. DOI: 10.3758/PBR.17.4.479

Wolfe E.S., Arabian, S. S., Breeze, J. L., & Salzler, M. J. (2016). Distracted biking: an observational study. *Journal of Trauma Nursing*, 23(2), 65-70. DOI: 10.1097/JTN.0000000000000188