EROAD Submission on Effective fatigue management

16 August 2019

National Transport Commission

Effective Fatigue Management

INTRODUCTION

- 1. EROAD is a technology company specialising in regulatory vehicle telematics, providing services in New Zealand, Australia and the United States.
- 2. We appreciate the opportunity to provide this submission. Representatives of EROAD are available to speak on the submission at your convenience.

ABOUT EROAD

- 3. EROAD believes every community deserves safer roads that are sustainably funded. This is why EROAD develops technology solutions that enable the better management of vehicle fleets, support regulatory compliance, improve driver safety, and reduce the costs associated with driving.
- 4. EROAD also provides valuable data analytics to universities, government agencies and others who research, trial and evaluate future transport networks. This aggregated and anonymised data enables those who use the roads to influence the design, management and funding of future transport networks.
- 5. In 2018 EROAD received the Brake Fleet Safety Award acknowledging EROAD's positive impact in creating safer drivers, vehicles and roads. EROAD products and services have received multiple awards and the company appears in the Deloitte Fast 50 Master of Growth, Asia Pacific. EROAD was also a finalist in the 2019 Hi-Tech Company of the Year award.
- 6. EROAD (ERD) is listed on the NZX, and employs almost 300 staff located across Australia, North America and New Zealand.
- 7. If you would like to know more about EROAD, you can visit <u>https://www.eroad.com.au/</u>

SUMMARY OF KEY POINTS

- 8. EROAD supports recognising fatigue as one of the key enduring risks to be explicitly referenced in a future Heavy Vehicle National Law (HVNL).
- 9. EROAD is concerned that the approach taken in the paper *Effective fatigue management* does not take full advantage of the opportunity afforded by the HVNL Review's stated intention, to paraphrase, of 'taking a blank sheet of paper and applying a first principles approach'.
- 10. EROAD considers that the nature of the opportunity is for the HVNL, with respect to fatigue, and in general as applicable:
 - a. To acknowledge that the safe operation of heavy commercial vehicles is a subset of workplace health and safety law
 - b. To articulate the nature of fatigue, how it applies to heavy commercial vehicles and their operations



- c. To identify the behaviours and controls needed to prevent, mitigate and respond to the precursors of, and the incidents and harms resulting from or exacerbated by the impact of fatigue on heavy vehicle operations
- d. To allocate responsibilities between regulatory regimes and, within the heavy commercial vehicle regulatory regime, between the regulator and the other parties to the sector
- e. To establish a governance framework to cultivate the safe systems culture and learning-based behaviours that will deliver safe outcomes and continuous improvement, consistent with enhanced sector productivity through reduced harm and more efficient operations.

GENERAL COMMENTS¹

What is fatigue?

- 11. EROAD recognises that the National Transport Commission (NTC) has developed a good understanding of fatigue in preparing the discussion paper. However, we consider that it might have been beneficial for the wider audience to elaborate on the NTC's definition of fatigue, to establish a firm foundation for subsequent discussions of influences, controls and mitigations. The following discussion of fatigue is set out so the NTC might better understand the perspective that has informed EROAD's responses to the questions in the discussion paper.
- 12. Fatigue is unavoidable. It is a natural consequence of going about a normal day.
- 13. For the average person, a normal day is diurnal active in daylight, asleep at night. Wakefulness and drowsiness occur on a natural rhythm set by a person's inner clock but subject to influence from external factors ("zeitgebers"), e.g. food, social interaction, light, rest and exercise. Being rested, unfatigued, is a product of adhering to the rhythm of the inner clock or, where deviating from that rhythm, buttressing the individual with an appropriate mix of zeitgebers. Consistency over time is also important: the greater the regularity of the sleep pattern, the more effective its restorative power. Consequently, times that pose higher risk of fatigue are:
 - a. Night time: generally from 10pm to 5am, and especially midnight to 3am
 - b. After being awake for the better part of a day: whether active or not, working or not
 - c. After a major change in when in the day one must be active.

¹ Sources for the comments in this Part include:

https://watermark.silverchair.com/kqg045.pdf? Shift work and occupational medicine https://www.healthline.com/nutrition/10-reasons-you-are-tired#section11

<u>https://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines</u> <u>https://www.inc.com/jessica-stillman/this-is-the-ideal-number-of-hours-to-work-a-day-ac.html</u>

https://www.indy100.com/article/the-ideal-length-of-working-week-is-not-five-daysand-heres-the-evidence--ZkXSMBFxOb

https://open.buffer.com/science-taking-breaks-at-work/



14. As such, work arrangements presenting particularly heightened risk of fatigue are: night shifts, late shifts, double shifts, rotational shifts, and split shifts.

A systematic response to the risks of fatigue

- 15. The risk associated with a situation has static, dynamic and situational components (including static, dynamic and situational protective factors that mitigate the risk). Thus:
 - a. A driver cannot go back in time and change how much or how well they slept the night before, so that is a static variable *for that day*. A driver can change whether they are driving or resting, so that is dynamic. A driver may or may not experience an episode of drowsiness or inattentiveness while driving, so that is situational.
 - b. What is static, dynamic or situational may change according to the frame of reference and/or which participant in the system the situation is being viewed from. Road condition is static for a driver, but dynamic for a road manager, because of their respective abilities to influence road condition and the timeframe over which they view the situation.
- 16. A safe road transport system would take note of this and be designed to ensure that participants asked the following questions:
 - a. Is the requirement to work at a time of heightened risk of fatigue:
 - i. **Justified**: has the requirement been arrived at through an active decisionmaking process that weighs net risks and benefits, as opposed to being merely an accident of timing?
 - ii. **Reasonable**: notwithstanding having a well-considered requirement, is the value of the requirement such that the heightened safety risk is actually worth accepting?
 - iii. **Managed**: have appropriate steps been taken, e.g. in the selection of the driver, vehicle and route, the provisioning for breaks, monitoring systems and/or other mitigants, to minimise the risk of fatigue impacting on completion of the requirement?
 - b. What underlying circumstances dictate the heightened risk inherent to the requirement as it is currently framed, and is each circumstance:
 - i. **Owned**: is there a party with the ability to control the nature and impact of that circumstance, and are they aware of, accountable for, and empowered in doing so?
 - ii. Where it is owned, is the current stance in each circumstance justified, reasonable and managed?
 - c. Is the relationship between the HVNL and the surrounding and supporting regulatory regimes for heath and safety at work, employment entitlements, and workplace privacy sufficiently reciprocal and integrated to allow responsibilities for differing circumstances and requirements to be appropriately allocated, aligned and managed?



RESPONSES TO THE SPECIFIC QUESTIONS ASKED

Question 1: How can we change our approach to fatigue management so we reduce fatigue related incidents and deliver Australia's road transport task efficiently and safely?

- 17. We consider that some of the prescriptive requirements in the current HVNL inhibit the ability to understand and control for the root causes of fatigue. For example, Figure 6 in the paper illustrates that some progress has been made in reducing fatigue related incidents. However, progress has slowed in recent years suggesting that the current framework has reached the limits of what it can achieve. An excessive focus on prescriptive regulatory controls will not help the industry to develop an understanding of the risks associated with fatigue and the appropriate control measures. Also, there is a risk that too much prescription leads to a 'tickbox' exercise that is process focused rather than risk focused.
- 18. We consider that Section 223 of the HVNL currently provides a robust definition of what constitutes fatigue. More broadly, we consider that the HVNL should move towards commonality with regulatory frameworks employed in other areas (for example, work health and safety). This approach would further embed the duties the HVNL currently places on various parties to understand and control risks, while reshaping the broader regulatory system to support this approach.
- 19. In order to make sure this shift is effective it is important that the regulator is well resourced and understands that a key part of its role is support and education. It should be a goal of the legislation to establish a 'continuous improvement' framework and a goal of the regulator to sustain and promote that framework.
- 20. EROAD notes the NTC's intention to review the definition of work-related heavy vehicles and the potential risks of a driver being able to undertake a full shift of tiring work related to a non-fatigue related heavy vehicle before climbing behind the wheel of a fatigue regulated heavy vehicle. As noted by the paper, even drivers and operators of vehicles that do not fall within the definition of fatigue-regulated heavy vehicle are subject to general duties to identify and control risks. Clearly, the risk associated with driving while fatigued would fall under this duty.
- 21. However, if there is an appetite to address the current gap in fatigue management, then the new legislation could move towards the approach adopted in the United States, where all time spent driving a commercial vehicle is classified as on-duty time, regardless of whether that vehicle is subject to specific requirements in relation to fatigue (for example, the requirement to use an Electronic Work Diary).
- 22. The United States definition of on-duty time includes the following:
 - all time inspecting, servicing or conditioning any commercial motor vehicle at any time
 - performing any other work in the capacity, employ, or service of a motor carrier
 - performing any compensated work for a person who is not a motor carrier.
- 23. The NHVAS offers a mechanism to vary allowable work and rest hours, provided the operator can demonstrate that effective systems are in place to control risk. The new legislation (and the supporting regulatory framework) should make this tiered concept more central and



ensure that incentives (greater flexibility) are well matched to the resources that operators must invest to get access.

24. We consider that it is important that the revised legislation provides the NHVR with the ability to prepare and release Codes of Practice. These will be an important tool in a framework that relies less on prescription and more on performance management.

Question 2: What fatigue related risks that are currently out of scope for the HVNL should be brought into scope? What is in scope that shouldn't be?

- 25. EROAD is supportive of the broad intent of the HVNL review to move the legislation away from prescriptive risk control and towards performance-based risk management where it is effective to do so. This implies that the question should perhaps be re-worded to reflect the intent of the review.
- 26. Rather than attempting to define and control every conceivable risk through the legislation, we suggest that the new HVNL should adopt a similar approach to that used in public health areas (for example, work health and safety legislation). This approach would ensure that the legislation is all-encompassing of risk (including fatigue) while obligating relevant parties to understand and control relevant risks. Subordinate instruments (regulations, Codes of Practice, guidance from the regulator) can be used to detail the performance levels required to ensure that duties are being complied with.
- 27. We agree with the statement in the paper that current HVNL controls focus mainly on longhaul operations and do not seem to consider the variety of situations in which heavy vehicles are operating. For example, the factors giving rise to fatigue related risks will be quite different for vehicles operating in rural Western Australia (poor roads, very hot conditions, inadequate rest facilities) than for vehicles operating in urbanised East Coast environments (congestion, pedestrians, road infrastructure). Placing a duty on supply chain participants to identify and control risks (and providing guidance on how to do that) should help to render some of the current prescriptive requirements unnecessary.
- 28. Setting the framework in this manner helps to shift the conversation away from prescriptive controls for every conceivable risk towards instituting a continuous improvement culture and defining the circumstances in which people might be able to work outside baseline limits.

Question 3: What are the key risks associated with long hours, night shifts and other work schedule factors? How do we account for the fact that not all work hours have the same risk without introducing excessive complexity?

- 29. Any pattern of work that is inconsistent with 'normal' human patterns will introduce a higher risk of drowsiness, reduced awareness and slower response times. Cumulative risk is a key factor for fatigue related incidents. Longer work days will increase the risk, particularly if drivers are regularly working long days. Long periods of night or shift work will likely increase the risk factor as well, as the frequency of disrupted and irregular rest times increases.
- 30. The second question relates back to one of the key questions in the risk-based regulation paper. As far as possible, we would suggest that the legislation should focus on defining the duties of different parties in the system. Subordinate instruments can describe performance levels. Work patterns that carry a higher risk factor will naturally require more complex management systems for the duty to be fulfilled.



- 31. The regulator plays a key role in making this type of system work by providing education and supporting resources. Inspection and enforcement processes also need to be credible. For those operators who do not have the resources to put in place complex fatigue management systems, the legislation should provide baseline requirements around work and rest time and record keeping (without prescribing the exact form of the records).
- 32. The legislation should allow flexibility for operators that are able to invest more resources in fatigue management systems. The BFM and AFM schemes under the NHVAS provide a way to do this. As noted in the response to question 1, the incentives and costs associated with accreditation need to be well aligned to encourage operators to pursue higher standards.

Question 4: How should a new HVNL address driver health and lifestyle factors? What kinds of controls would be effective?

- 33. We question whether it is realistic to expect the HVNL to control for driver health and lifestyle factors. These trends are largely driven by broader cultural factors that are outside the control of either the regulator or the employer truck drivers will likely view attempts to control their lifestyle outside of the workplace unfavourably. Monitoring compliance with any legislative controls would likely need to be quite invasive.
- 34. Like the approach taken in Western Australia, the legislation can set minimum requirements as part of general duties for example, the driver must be in a fit state to undertake and complete the task. The onus needs to be on the driver and operator to determine how that standard is met, with guidance from the regulator about effective ways to manage risks associated with poor driver health and wellbeing.
- 35. We do consider that the regulator should have a role to build relationships with other government agencies operating within public health frameworks. This would help the regulator to understand effective ways of influencing better lifestyle choices and to communicate that to the industry. We think that working with operators and drivers is likely to be a more effective way to induce positive lifestyle changes than legislative controls.
- 36. If there is a desire to address health and lifestyle through the regulatory framework, we consider that this would be more effectively done through mechanisms such as the NHVAS. The AFM Standards already contain a requirement that drivers are provided with information about how to manage their health.

Question 5: How do we ensure the HVNL is agile enough to adopt best practice fatigue management as it emerges? How do we encourage continuous improvement? Can training help?

- 37. We would suggest thinking about this slightly differently the HVNL should not be adopting best practice. Duties, responsibilities and incentives should be structured in a way that encourages operators and drivers to adopt best practice. As far as possible, the legislation should be 'technology neutral,' setting out the key things that a technological solution should be able to do and granting the regulator the power to approve specific solutions (for example, the legislation provides for the regulator to approve EWDs and the regulator has set out the standards by which applications will be evaluated). As noted above, the actions of the regulator (in terms of both educating and enforcing) will be key to encouraging and sustaining a continuous improvement culture around fatigue management.
- 38. Training is important, and the legislation could lay out a requirement to ensure that participants in the system are trained to maintain compliance with appropriate safety



standards. The regulator would then have a role of ensuring that training is undertaken, and perhaps providing resources that could support the provision of training. This should be supported by an intelligence function that understands what is happening in the sector and enables the regulator to shift focus when necessary.

Question 6: How can we better accommodate emerging technologies? How can the new HVNL get the best value from technology and data? Do you think fatigue monitoring technology can supersede work and rest hour requirements?

- 39. As noted above, the legislation should be 'technology neutral.' It should facilitate the adoption of useful technology solutions, provided the solution meets a set of requirements and is approved by the regulator (or some kind of third-party accreditation). It is likely that some form of prescribed work and rest time requirements will need to remain in place to account for smaller operators who cannot afford to invest in technological solutions.
- 40. We also consider that careful consideration needs to be given to whom will be able to access any data that is collected, when they will be access it and for what purpose. In November 2018 we submitted on the NTC paper dealing with government access to connected-ITS and autonomous vehicle data. Given the highly personal nature of fatigue monitoring data, our summary comments on that issue are even more applicable here. They were as follows:

"We agree with the approach of establishing a set of principles to guide future change. We consider that this best allows for the uncertainty that exists today, while clearly asserting the enduring public objectives and values that future change should attempt to preserve and promote.

"We consider that [fatigue monitoring] data are examples of the proliferation of sensors and data gathering across society. The privacy and security consequences of this proliferation should be considered as a whole, not just sector-by-sector, or case-by-case:

- a. "Many of the protections and especially against improper use [of fatigue monitoring data] by enforcement entities – depend on an informed individual acting on their own behalf. The nature of the challenge posed by big data is the increased risk of public ignorance of whether, how and against whom to act if privacy is breached by a government entity.
- b. "Given the growing sophistication with which personal information can be assembled from previously disconnected and innocuous information streams, will public watch-dog institutions have sufficient power and resourcing to be active in monitoring for and responding to such breaches?

"A major omission from the paper is consideration of the impact, on the role and interests of private sector information creators and collectors, of any controls on government access. We note that this is not excluded from the scope, yet is also not directly identified or discussed, nor addressed by the draft principles. This is particularly the case where, for example, a control might be framed to focus on specific technologies and the technical 'how' of gathering and sharing information, rather than the 'why' and the behavioural aspects of 'how'.

a. "We are concerned that the ongoing evolution of the future framework takes account of the dampening effect fear of government surveillance might have on the rate of uptake of [fatigue monitoring] technologies; government access to information should be balanced against government interest in the public benefits of placing these new technologies into the hands of the public



- b. "We are also concerned that the ongoing evolution of security and inter-operability requirements to buttress government access to information be, so far as possible, performance-based rather than prescriptive, in order to minimise barriers to market entry (especially for smaller companies), to prevent the stifling of/incentives for innovation, and to ensure primary and secondary uses do not unnecessarily suppress private information markets
- c. "We consider greater emphasis could be given to the state's access being mediated through market mechanisms, rather than regulatory power, noting:
 - i. "This would be where access is for research and management purposes rather than for investigation and enforcement;
 - ii. "This would leverage the array of duties and protections that exist in the private sphere; and
 - iii. "This would ensure the interests of private information collectors/creators are given visibility and protection in the framework."

Question 7: How can the new HVNL meet the needs of all Australian states and territories? What should the new HVNL adopt from Western Australia and the Northern Territory, other transport modes and other industries' fatigue management approaches?

- 41. The approaches adopted by Western Australia and the Northern Territory appear to offer considerable opportunities for the new HVNL less prescriptive reporting requirements and a focus on ensuring participants in the system understand the risk and put in place controls. Overall, the frameworks in place in these jurisdictions appear to be more consistent with a 'chain of responsibility' and public health approach to regulating by placing duties on participants to operate safely (including avoiding risks to the safety of the public) and have systems in place.
- 42. Moving the HVNL towards this model of regulation will likely assist with achieving greater national consistency. A more flexible system which puts more responsibility on participants in the system to identify, understand and control the risks associated with their activities should reduce (but not eliminate) the need for prescriptive requirements to account for the wide range of tasks and environments covered by the law.
- 43. The tiered approach adopted in the civil aviation space in Australia (referred to on page 26 of the NTC paper) merits further evaluation. Providing operators with flexible models accounting for the available resources and needs could be effective. Arguably, the HVNL already does this to an extent by providing operators with access to more flexible fatigue management frameworks (through the NHVAS) provided they gain and maintain accreditation.

Question 8: Are prescriptive rules desirable in a new HVNL? If so, how can we simplify rules in the HVNL to make them easier to understand so that they're easier to comply with?

- 44. Some level of prescriptive rules is likely to be unavoidable as the paper notes, some operators will simply want a set of clear rules and expectations. Also, certain driving situations (for example, the carriage of dangerous goods) may require a higher level of prescription.
- 45. Providing operators with flexibility in demonstrating compliance should be helpful for example the new HVNL may retain a level of prescription about standard work and rest hours but enable operators and drivers to track and demonstrate compliance in a variety of ways,



provided those records are available on request, like the model employed in Western Australia. This could take the form of paper records held by the driver and the record keeper, or an EWD device approved by the regulator that can electronically track vehicle usage and provide relevant data.

Question 9: Would the compliance options described in section 4.5 be a more effective approach to regulating fatigue management? If so, what should be included in the new HVNL, its subordinate documents, or elsewhere, such as in work health and safety laws? How would the appropriate fatigue management option be allocated to an operator – by self-selection or other means?

- 46. The compliance options described in section 4.5 would likely be more effective because they are focused on managing and mitigating risk rather than focusing on compliance with prescribed processes. The new HVNL should describe the outcomes that the government is seeking and describe the duties and obligations of each party in the system. In doing so, it should be as consistent as possible with the duties and obligations set out in health and safety legislation to minimise inconsistencies. The HVNL should also describe the role of the regulator and the offences and penalties regime.
- 47. Where possible, detail about precise schedules of work hours and methods of compliance should be set out in regulations, or even Codes of Practice developed by the regulator. Doing things in this manner provides for speedier change if any part of the new framework is not functioning effectively.
- 48. We would suggest that the task of assigning the appropriate fatigue management option would be handled mainly by the regulator, according to clear criteria laid out in the HVNL. In order to get to higher levels of a tiered framework, operators should demonstrate that they have appropriate systems in place and a good history systems need to be supported by a good culture or they risk becoming a tick box exercise.

Question 10: Should the new HVNL give operators the option of taking full responsibility for risk management? What would be the roles of the regulator and roadside enforcement in such a system?

- 49. It is not clear what is meant by full responsibility under a chain of responsibility, outcome focused system, operators should have responsibility for identifying and controlling those risks that they can while other parties retain responsibility for the risks they are best placed to manage. The role of the regulator should be (for the vast majority that want to comply according to the Braithwaite pyramid) providing education and support, collecting intelligence and carrying out enforcement where necessary.
- 50. The role of roadside enforcement should remain essentially the same as it is now. Even if prescription around fatigue management is reduced, there are a variety of other things that need to be complied with (vehicle dimensions and mass, driver licences). Roadside enforcement can still be used to monitor compliance with these things and to raise risks that might merit further investigation by the regulator. In terms of fatigue management, roadside inspection can also be used to determine whether the systems in place are being used and that any baseline requirements in the HVNL are being complied with.
- 51. We would encourage the regulator to work with the roadside enforcement units in each jurisdiction to maximise national consistency. Perhaps the regulator could also provide



support and training to ensure that roadside enforcement officers are well trained in respect of fatigue management requirements.

Question 11: How can we get the best overall value from a compliance and enforcement strategy for fatigue management? How are scarce resources best allocated, and what tools do regulators need? What provisions in the law do operators need?

- 52. The regulator needs to have a thorough understanding of who is operating in the sector and what constitutes a risk that might require further investigation. In the context of multiple regulators and enforcement agencies in Australia, this will require good information sharing. The regulator will need a good intelligence function and the ability to investigate and understand, when there is an incident, which participant carries the responsibility for not controlling the risk.
- 53. Regarding the last question, operators need a clear right to gather data to support fatigue monitoring and management, accompanied by a clear responsibility to manage and use that data only for that purpose. Operators will need to be required to preserve the privacy and secure the personal data of drivers where it is not directly relevant to fatigue monitoring and management.
- 54. We would suggest that regulator access to the data should be limited to meta-data for audit purposes and aggregated and anonymised data for system development purposes. The regulator should only be able to access personal driver data in the event of an incident or for investigative purposes.

EROAD CONTACTS

Peter Carr Director Regulatory Market Development Australia New Zealand peter.carr@eroad.com

Sam Harris Senior Regulatory Analyst Australia New Zealand samuel.harris@eroad.com