Transport and Road Safety (TARS) Research Centre

Submission to the National Transport Commission review of the National Heavy Vehicle Law

Issues Paper: Effective fatigue Management

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The National Transport Commission (NTC) Issues paper proposes to develop an entirely new Heavy Vehicle National Law (HVNL) including the component on Fatigue Risk Management. The 'first-principles' review of the law provides an opportunity to develop safer, healthier and more efficient trucking industry for Australia. In the development of new law, however, it is important to avoid throwing the baby out with the bathwater and to acknowledge the worthwhile components of the existing HVNL while dispensing with those that were less worthwhile. This submission contains our responses to the questions posed in the NTC Issues paper. It is divided into two parts: first some summary comments then our responses to each of the questions.

Summary comments

The fatigue management goal of the existing HVNL (s 4) is to 'prevent drivers of heavy vehicles from driving while fatigued'. We propose that the new law should modify this goal to 'prevent drivers from experiencing fatigue while driving'. This seemingly subtle change in the order of words is needed as without it, the focus of the new law could be interpreted too narrowly as only the effects of fatigue while driving not on reducing sources of fatigue from the work system, including long hours of work and driving, too little rest and rest at the wrong time of day. Any attempts at fatigue risk management in the trucking industry (and any transport mode) must reduce the factors in work that cause fatigue as far as operationally possible. It is essential to include fatigue risk prevention in any industry law. This means as far as possible preventing fatigue from occurring in the first place. If the focus of the law is only on preventing drivers from driving while fatigued, the focus is only on restricting or mitigating the effects of fatigue. This misses the opportunity to manage fatigue from the nature of the work itself including factors that motivate drivers to push on and to do very long hours of driving work and factors that constrain driver productivity such as queuing and waiting for loads. These factors also contribute to a highly inefficient transport industry.

If the aim is only to mitigate effects when drivers experience fatigue, the methods to do so will be less effective for a number of reasons.

1. Methods for detecting fatigue while driving focus on detection of the final transition into sleep. This occurs late in the process of fatigue and safety risk will have been high for a considerable period before eyes close.
2. Options for drivers to act to reduce fatigue when drowsiness is detected are often very limited: nowhere to pull the vehicle off the road easily or safely, problems of meeting delivery schedules if drivers need to pull-over for a nap or even for a coffee. Also, the management of drivers who have multiple episodes of drowsiness while driving is a problem for the operator and for the driver themselves.
3. The technology currently available for detecting drowsiness while driving is not ideal. Many of these devices have no clear evidence on reliability or validity of detecting drowsiness. Furthermore, they are expensive and so not realistic for small operators especially in an industry like trucking which operates on very small profit margins.

The Issues paper puts an argument for the new law to focus on fatigue risk mitigation and removing prescriptive elements that exist in the current law. In our view, this would be a highly retrograde change and would allow fatigue to be a constant problem for drivers and road safety as

there would be no formal attempt to reduce fatigue causes at source. Clearly, the new law needs to incorporate both preventive elements to reduce fatigue in drivers including prescription of limits on hours of service and requirements for breaks as well as secondary safety or mitigation elements that will attempt to reduce the effects of fatigue while driving. Such a multi-pronged approach that targets prevention and mitigation has been outlined for fatigue risk management within organisations by Dawson and McCulloch (2005).

The Issues paper put an all or nothing view about the current law and contains a number of inaccuracies which should be addressed:

- The Issues paper argues that crash statistics tell us that the HVNL is not stopping people impaired by fatigue from driving heavy vehicles and claims this is because the law itself is inadequate. It is much more likely that these problems have continued mostly because the law is not being administered well. In particular, there has been little emphasis over the last few years on using the opportunity available in the Advanced Fatigue Management (AFM) option of the fatigue laws to be more flexible in scheduling that meets operational needs. As a result, fatigue is still an increasing cause of crashes.
- The Issues paper makes the claim that the HVNL is based on 'deficient assumptions about fatigue risks and causes' and that the 'HVNL does not manage fatigue risks well'. Both claims are overstated. As discussed below, the Standard and Basic Fatigue Management (BFM) options contain elements that do not address known fatigue risks, but that is not the case for the AFM version which lays out clearly the risks and causes of fatigue and provides an evidence-based rationale for the principles underlying the AFM approach. These are available on the National Heavy Vehicle Regulator (NHVR) website.
- The HVNL focuses on preventing drivers from driving while fatigued which promotes, rather than precludes fatigue mitigation. In fact, framing the aim of fatigue management under HVNL around stopping drivers driving while fatigued is calling for mitigation. The problem is that secondary safety or mitigation might stop driving while fatigued but will do nothing about preventing fatigue in the first place.
- The paper argues that fatigue management under the HVNL does not acknowledge or cope with the considerable diversity of work in the trucking industry. Unfortunately, this overlooks the fact that drivers all share the human response to the causes of fatigue and so will experience fatigue and its consequences where these causes exist.

Any change to the HVNL must contain two options:

1. Clear, simple maximum limits on work and minimum requirements for rest so operators and drivers who just want to get on with the task of moving freight safely without major cost, can do so. This means the limits and requirements must be prescriptive and they must incorporate limits that will manage fatigue under most circumstances which means they are likely to be more conservative compared to the other option. This option also ensures that some clear benchmarks are provided to the industry about how to manage work and rest.
2. A more flexible option is needed where operators have specific operational needs that cannot be met. This option can be tailored to operational needs so the work-rest patterns

can be more flexible with the objective of obtaining a safe balance between operational aspects that require longer hours of driving, short rest times or long runs of night work, for example. Guidance to operators and drivers is essential in this option to ensure that a safe balance is obtained between the competing pressures of work and the need to manage fatigue.

The Issues paper proposes to proceed to a new version of the law from first principles however it does not do that. A first principles review would need to:

a) Review evidence of fatigue while driving and cite it to justify conclusions.
b) Review possible approaches in other jurisdictions with evidence of their effectiveness.

This paper does neither yet presupposes the need for "…an entirely new law…" (p.7). Without this level of review, the revised law is likely to be inadequate. The contribution of heavy vehicles to the transport industry is too important to Australia and drivers too essential to the work of the industry to impose inferior law and regulation. This Issues paper needs much more in-depth analysis to put forward evidence-based approaches to fatigue risk management.

NTC Review Questions

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?

The current structure of fatigue management under the HVNL should be revised to take into account current evidence on the causes of fatigue for heavy vehicles and how this relates to the elements of the existing law. There is strong evidence that long hours of work, especially night work, early starts, long runs of consecutive shifts, infrequent breaks within shifts and short opportunities for sleep are all risk factors for fatigue. Many have been linked to crashes (e.g., Stevenson, Elkington, Sharwood, Meuleners, Ivers, Boufous et al., 2014). Most recent evidence from the project on Heavy Vehicle Driver Fatigue completed for the NTC by the Cooperative Research Centre (CRC) for Alertness, Safety and Productivity (2019) suggests that some of the current regulatory limits, for example, under BFM, might already be too high for effective fatigue management. The hours of service in the road transport industry need to take this evidence into account in order to reduce the risk of fatigue-related incidents.

This means that changes to our current approach need to include the following:

c) Remove the Basic Fatigue Management (BFM) option. This change should be made on the basis that it allows very long hours of work in a shift (14 hours), and in a week (84 hours in week 1 of 2) does not allow sufficient time for a restorative long sleep (7 hours or 6 + 2 hours) nor for sufficient break time within a shift.
d) Modify Standard hours on the basis that it allows weekly working hours of up to 72 hours over 6 consecutive shifts and only requires a break of 7 hours which is too short for restorative sleep.
e) The Advanced Fatigue Management (AFM) approach should be encouraged as it addresses the problems of balancing operational needs with good fatigue management.

Under this broad approach WA and NT versions of fatigue risk management could be incorporated as specific templates for fatigue management.

As noted, the BFM regulatory option allows longer driver working hours but offers little in the way of compensatory fatigue management and there is no evidence of improved fatigue management from the mandatory training and health checks built into it. Companies wishing to use longer than standard hours should be required to submit an AFM. All drivers in all regulatory options should receive effective fatigue management training so that contract drivers can move between AFM and standard arrangements if required and for their WHS benefit.

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

There is a body of evidence from research (e.g., Belzer and Sedo, 2018; Williamson and Friswell, 2013) and public inquiries (House of Representatives Standing Committee on Communication, Transport and the Arts, 2000; Quinlan, 2001; Quinlan and Wright, 2008) that shows a clear relationship between the financial incentives operating in the long distance road transport industry and driver hours and fatigue. Minimum rates of pay that cover costs and provide a fair salary for drivers and payment for all drivers' work time including non-driving time, are related to better fatigue outcomes. This means a clear direction for reducing fatigue incidents and improving safety is a requirement for payment regimes that adequately and fully compensate drivers. The influence of payment arrangements on driver working hours, fatigue and compliance has not been adequately regulated under the HVNL. Greater attention to financial arrangements which promote long working hours and fatigue is needed. In particular, contractual arrangements that do not pay drivers for all their work time (including waiting time, truck cleaning and refuelling, local deliveries and pick-ups, etc) should be deemed a breach of the Primary Safety Duty on parties in the CoR to:

> *"…ensure the party's conduct does not directly or indirectly cause or encourage—*
> *(i) the driver of the heavy vehicle to contravene this Law"* (clause 26C 2(b))

Consistent with comments in the Issues paper (section 4.2), our own research has indicated that fatigue is an issue for both long distance heavy vehicle drivers and short haul light truck drivers (Friswell and Williamson, 2008; 2013). It is our view that effective fatigue management is important for the safety of all occupational drivers and HVNL should apply similarly to all heavy vehicle drivers not only those who work long distance or in vehicles over 12t gross mass.

The Issues paper (section 4.1) targets reductions in fatigue-related fatalities in single vehicle crashes but no reason is given for ignoring multi-vehicle crashes with fatigue as a contributor. Both types of heavy vehicle crashes should be monitored and there is clearly a need for better coding of crash responsibility and fatigue-related contributing factors in crash data. The inclusion of multi-vehicle crashes in fatigue safety targets will be particularly important for short distance drivers who have greater urban driving exposure where multi-vehicle crashes are more likely.

Question 3: What are the key risk factors 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?

The key scheduling risk factors for fatigue have already been defined in the AFM justification and have been reaffirmed by the recent CRC for Alertness, Safety and Productivity (2019) findings. These include long hours of work, especially night work, shifts ending in the early morning hours, early starts, long runs of consecutive shifts, infrequent breaks within shifts, and short opportunities for sleep. The effects of these risk factors are relatively well understood.

In general terms, work schedules affect risk through i) acute and chronic sleep restriction arising because the time and circumstances allowed in the schedule for sleeping are not sufficient to permit full recovery, ii) long shifts allow greater accumulation of fatigue as the time since last sleep becomes longer and sleep need (or debt) accumulates, iii) circadian fluctuations in alertness influence the ability to sleep at certain times of day, and can combine with sleep debt to increase fatigue, and iv) fatigue increases with time doing a monotonous task (like driving) so the length of work periods and the timing and frequency of relief breaks from work are risk factors.

Research with short distance truck drivers has shown that high workload and stressful work are also fatigue risk factors together with long work hours (Friswell & Williamson, 2008; 2013) but work intensity factors are not accounted for in the HVNL except through working hours.

Variations in risk with, for example, time of day, amount of prior work and amount and recency of recovery time are currently accounted for by the allowable work and rest limits. These regulation limits should certainly be reviewed against the findings of the CRC for Alertness, Safety and Productivity (2019) and other relevant research. It is our view problems with complexity should be addressed initially through clearer advisory material, better education for drivers, investing enforcement officers with an educative role, and provision of electronic supports such as scheduling apps.

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

The HVNL does not currently address the impact of work patterns on driver health and lifestyle adequately. Depending upon the regulatory option, drivers may legally work between 72 and 84 hours per week which leaves little time for life. Surveys indicate many drivers do indeed work the long hours permitted. For example, heavy truck drivers surveyed by Williamson and Friswell (2013) reported an average of 68.6 work hours per week and 47.8% of the participants felt their work interfered with their family life. The work limits of Standard and AFM regulations should allow drivers more time to participate in other aspects of their lives. Similarly, the minimum time permitted for a long break (7 hrs continuous break) is insufficient for drivers to get enough sleep to start the next shift well-rested let alone to eat, shower, and engage in any social contact or recreational activity in addition to sleeping.

Driver education about fatigue and health is of course welcome, but it must be accompanied by work schedules that genuinely permit a healthy lifestyle.

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?

The HVNL currently allows best practice fatigue management under the AFM option. Under the existing law, there is no impediment to companies improving fatigue prevention by allowing more and longer breaks, shorter shifts, scheduling more work in the daytime, reducing the number of consecutive shifts, using fatigue detection technology to identify occasions when prevention efforts are unsuccessful, collecting electronic work records and counselling drivers about their driving and fatigue measures, for example. The only practices precluded by current regulatory options are implementing more work and less rest than the limits allow. The Issues paper fails to make a case that more work and less rest would be beneficial for drivers' fatigue management and safety, or for their health and lifestyle.

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?

There is currently no impediment to the use of legal, emerging fatigue-related technologies in the heavy vehicle industry. Companies are free to use emerging technologies to support their fatigue management activities under existing laws but they may not defer their management responsibilities to these technologies. This is a sensible position in view of the limited evidence base on the effectiveness of some emerging technologies, including fatigue monitoring devices, and the shortcomings of fatigue monitoring per se as a strategy for fatigue management.

In order for the HVNL to get best value from technology and data, it must first be established that technological systems work as claimed. Evidence of the effectiveness and reliability of technologies must be scientifically strong, unambiguous, and replicated before they could be considered for industry rollout as standard safety aids. Certainly, the positive experiences reported by individual companies must be backed up by good quality, robust scientific research using large groups that can quantify the benefits and shortcomings of a technology across different types of operations before any consideration be given to introducing it to the entire industry.

Regardless of its effectiveness, fatigue monitoring technology can never replace work and rest hours requirements to manage fatigue for the fundamental reason that mitigating fatigue or the performance effects of fatigue is a secondary safety intervention. Fatigue monitoring technology detects the threat to safety once it has already occurred in order to limit its consequences rather than the more effective approach of preventing the threat to safety occurring in the first place. As noted earlier in this submission, fatigue monitoring technologies, if they work effectively and reliably, could have a role as a second-tier protection in cases where the primary prevention efforts fail or where a driver experiences poor sleeping or poor health, for example. That is, they

could be helpful as back up protection against transient incidents with higher fatigue risk. Sole reliance on fatigue monitoring technologies has other important shortcomings that also need to be considered, including:

a) monitoring and responding to a driver's current state cannot provide the benefits for fatigue management and operational efficiency that pre-planning of work and rest within and across trips provides. For example, what do a driver and company do when monitors identify fatigue in the middle of the trip? Where does the driver stop if it's a large articulated truck? Rest stop audits (Jurewicz and Comport, 2008) and driver reports (Span, 2013) indicate that rest stops suitable for large trucks are too infrequent on many roads to allow drivers to pull over at short notice so there is a practical need to minimise drivers' need for unplanned stops. Livestock carriers and dangerous goods carriers can have additional rest stop requirements that must be met where they pull over (Green, Roper, Steinmetz, Latter, Lewis and Gaynor, 2019) making planning even more important in these sectors. In addition, unplanned driver sleep stops have implications for loads that companies must manage. Planned trips with work and rest hours restrictions to prevent fatigue allow companies greater control over the efficiency of the freight task.
b) the detection of fatigue using current monitoring technology typically occurs late in the process of becoming fatigued. The driver and load can have been at risk for some period before the detection technology triggers a warning. This is too late for the technology to be used as the primary protection against fatigue-related incidents. In addition, there is limited research about how well fatigue monitoring technology captures performance impairments arising from the time spent doing the driving task as opposed to drowsiness. Whereas rest break requirements can address this cause of fatigue, it is not clear monitoring technologies can identify it reliably.
c) the cost of fatigue monitoring technology would be an impost on smaller operations in the industry for uncertain benefit which makes this approach unsuitable compared to work and rest hours requirements. If such technology was introduced to replace hours of service smaller operators with fewer resources would be disadvantaged whereas larger wealthier companies that can leverage greater economies of scale would be advantaged. In this sense, mandating the technology would not be competitively neutral. If voluntary adoption of monitoring technology was introduced, industry penetration would be too slow to support regulation.
d) reliance on fatigue monitoring for fatigue management would leave drivers vulnerable to pressure to work excessive hours which would have negative effects on their quality of life. The road transport industry is very competitive and a number of public enquiries have highlighted how that can encourage price undercutting, flouting regulations, and driver exploitation (e.g., Quinlan, 2001; Wright and Quinlan, 2008). Removing the hours of service requirements in favour of fatigue monitoring could result in a situation where unscrupulous employers expect drivers to work until the monitoring device says they must stop and where drivers feel unable to refuse these paid driving hours due to financial and other pressures.

Other existing technologies such as in-vehicle telematics could provide valuable data for a system of routine monitoring of driving patterns and compliance under the HVNL by the regulator. This data would allow a better understanding of how regulations are being practised in the industry and

be a valuable source of information about the performance of regulations. However, the extent of industry penetration of these technologies is a pertinent consideration here too.

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 (WA) and the Northern Territory (NT), other transport modes and other industries' fatigue management approaches?

No comparative data on crash rates per vehicle kilometre, fatigue-related crashes per vehicle kilometre, insurance claims, or driver fatigue reports under the different regulatory arrangements in different states (or indeed under the different HVNL regulatory options) is available. Nor are other data on workplace injuries and health among drivers working under different regulatory conditions presented in the Issues paper. Statistical comparisons of drivers working in similar operations but under different regulatory schemes have not been conducted. In the absence of evidence that the WA and NT approaches lead to better safety outcomes than the HVNL or that any components of their approaches are more successful than others, there is no basis for recommending the adoption of particular aspects of the WA and NT systems. When fatigue management legislation was revised in 2009, WA and NT were invited to join the HVNL and a number of potential arrangements were discussed. One of these was for their approach to be incorporated under the HVNL as jurisdiction-wide AFM templates (and this is still possible). This would have allowed operators in those jurisdictions to benefit from greater flexibility than allowed under their state/territory law. However, there wasn't enthusiasm in WA and NT for adopting the HVNL primarily, it appeared, for political reasons. As then, achieving consistency with WA and NT might not be possible no matter what changes are made to the HVNL. Change for the sake of consistency that brings no safety benefit should be avoided. This is particularly important as the Issues paper acknowledges only a minority of drivers crosses jurisdictional boundaries so the problem of inconsistency is limited to only a subsection of the industry.

The multi-tiered approach to fatigue management adopted in the aviation transport sector in Australia is broadly consistent with approach applied to road transport in that it includes a range of regulatory options with varying degrees of prescription. As discussed earlier in this submission, we think a 2-tiered approach (including a prescriptive Standard hours and an AFM option) provides the best balance between prescription and flexibility for road transport, and not a 3 tiered model as used in aviation. We also caution against adopting regulatory practices from aviation (or rail) in the absence of evidence about their relative effectiveness. In a recent survey we conducted of more than 1000 Australian commercial air pilots, just over half (52%) reported fatigue was a major or substantial problem for them at work (Williamson and Friswell, 2017). This level of fatigue reporting by pilots compares very unfavourably with the proportion of Australian heavy truck drivers who report fatigue is a major or substantial problem (e.g., 13% in Span, 2013) and suggests road transport has less to learn from aviation about effective fatigue management than might be assumed. With regard to the rail regulatory approach, no evidence was provided in the Issues paper to suggest the Australian rail sector has been more successful at managing fatigue and safety than road transport so the usefulness of rail regulation for informing HVNL is not clear.

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?

Prescriptive rules are essential in the HVNL. The majority of the industry are very small operators who might not have the necessary resources to develop customised risk-based fatigue management systems from first principles and would opt for a regulatory regime with prescriptive rules to ensure compliance with accepted safety standards. A Standard hours regulatory option should be retained for this portion of the industry. However, the Standard hours rules should be reviewed and modified if necessary in light of an updated review of the research evidence on shift work and fatigue risk, including the recent results from the CRC for Alertness, Safety and Productivity (2019). Such a review should also consider how to best communicate the rules to improve understanding and ease of compliance.

Advanced Fatigue Management (AFM) should be retained to allow greater operational flexibility within (prescriptive) outer limits on work and rest arrangements. The Advanced Fatigue Management model was originally designed partly to address the common complaints of drivers at the time that standard hours are too inflexible and do not allow drivers to rest when needed (see, for example, Williamson, Feyer, Coumarelos and Jenkins, 1992), and it can still address those same complaints made today (e.g., Thornthwaite and O'Neill, 2016). It is likely that the currently low uptake of AFM would be increased through the development of some relevant AFM templates which would assist smaller operators develop effective risk management approaches within the AFM framework. The current AFM limits were set on the basis of the available research evidence at the time. New research should be continually added to the evidence base and the limits reviewed periodically.

The current Basic Fatigue Management (BFM) regulatory option allows for some work and rest patterns that are inconsistent with the evidence collected by the CRC for Alertness, Safety and Productivity (2019) on the risk of fatigue. Indeed, BFM was never predicated on good fatigue management principles and should be removed from the regulatory framework.

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?

A regulatory approach is needed for the transport industry that allows a simple prescriptive approach and an approach that is more flexible and allows for a variety of work and rest arrangements to manage fatigue. This need can be met through Standard hours and AFM regulatory options, where operators are free to self-select their regulatory preference but templates and practical support are provided to maximise the ability of smaller operators to access the flexibility of AFM if they wish.

A safety assurance approach to regulation is not necessary for good fatigue management. Under AFM, operators have the flexibility to reduce work hours and increase rest breaks to actively manage fatigue risk if they feel drivers are not able to manage fatigue risk well. The only thing AFM does not allow operators to do is increase work hours and decrease rest breaks beyond scientifically supported limits. Although such changes might be operationally desirable, they are not desirable for improving fatigue management. That is, the only reasons to adopt a safety assurance approach rather than an AFM approach are for productivity gains, and these would come at the cost of poorer fatigue management.

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?

As noted at Q9, a safety assurance approach is not appropriate because its primary advantage is increased productivity not improved fatigue management.

The existing AFM gives operators responsibility for fatigue risk management while imposing some evidence-based limits on practices. The role of the regulator is as a regular auditor to ensure that all participants are being honest and to use this auditing as a tool to understand the pressures in the industry that need to be changed to ensure fatigue management is optimal. This is also a way of ensuring agility of the HNVL and requires NHVR to take a more active role in ensuring that the industry is managing fatigue well and drivers are properly protected. The regulator must also retain control of the process of setting limits on work and rest and of approving work/rest patterns under AFM as an independent authority.

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?

There is clearly a need to better educate compliance and enforcement officers to focus more on breaches of fatigue management principles rather than less important breaches of administrative procedure. Compliance and enforcement officers should be given a role in educating drivers about the system requirements and also in collecting information on the practices of the industry that indicate fatigue risk. It is also important that regulatory compliance and enforcement attention focus systematically on other parties in the Chain of Responsibility (CoR), most particularly operators who hire drivers but also others in the chain. The activities of these parties, such as their practices around time-slotting and driver queuing and waiting, can affect fatigue risk (Friswell and Williamson, 2019; Williamson and Friswell, 2013) and undermine the effectiveness of fatigue management regulation for drivers (Span, 2013).

Question 12: What else would you like to tell us about effective fatigue management?

We have no further comments.

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