

**HEAVY VEHICLE DRIVER
FATIGUE: POLICY PROPOSAL
FOR TAKING SHORT RESTS**

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National Transport Commission

**Prepared by
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REPORT OUTLINE

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Address:	National Transport Commission Level 15/628 Bourke Street MELBOURNE VIC 3000 E-mail: ntc@ntc.gov.au Website: www.ntc.gov.au
Type of report:	Policy Proposal
Objectives:	The heavy vehicle driver fatigue review is a key component of the third heavy vehicle reform package. The aim of this review is to improve road safety through the implementation of policies and practices addressing the management of fatigue in the road transport supply chain.
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Key Milestones:	This policy document is being released at this date for public information only. Public consultation on both draft legislation and revised policies developed for the heavy vehicle driver fatigue reform will take place later in 2006 upon receipt of the draft legislation.
Abstract:	This policy paper considers the potential for greater flexibility to be provided for drivers in taking mandatory short rest breaks and balances this with the advice from fatigue experts. It considers the need for greater flexibility, the associated risks and recommends the steps that must be taken under the different fatigue management options to manage the associated risks.
Purpose:	Proposed policy for information purposes only.
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FOREWORD

The National Transport Commission (NTC) is a body established under an intergovernmental agreement with a charter to develop, monitor, and maintain uniform or nationally consistent regulatory and operational reforms relating to road transport, rail transport, and inter-modal transport. The NTC is funded jointly by the Australian Government, States and Territories.

Fatigue is one of the main causes of crashes involving heavy vehicle drivers. The Heavy Vehicle Driver Fatigue Review is a key component of the Third Heavy Vehicle Reform Package. The aim of this review is to improve road safety through the implementation of policies and practices addressing the management of fatigue in the road transport supply chain.

This policy paper articulates the NTC's view on short rest breaks. This policy paper varies from the ATC approved policy that recommended six-hour driving periods prior to a rest break. New research and more extensive consultation has led NTC to the view that the six hour requirement should be revised.

Stakeholders should note that the views expressed are those of the NTC which have been informed by discussions with industry, regulators and relevant experts. These views have not been endorsed by any other organisations including the Transport Agencies Chief Executives or by industry peak bodies.

The policy position put forward in this paper is subject to change. The NTC will be undertaking further consideration of these issues over the coming months and will advance a final draft Heavy Vehicle Driver Fatigue short rest policy proposal in mid 2006, after consultation with transport agencies and industry.

Final Heavy Vehicle Driver Fatigue draft policy proposals will be made available through the NTC website along with the draft legislation and a regulatory impact statement.

While NTC is not formally seeking comment on this paper, the project manager is happy to consider any written or verbal responses and may be able to attend meetings or seminars to discuss the policy issues. Contact details are below. NTC plans to release the package of revised policy papers, regulatory impact statement and draft legislation in August 2006 for a six week period. Formal comment will be sought at that stage. Comments will then be analysed and a final package will be sent to the Australian Transport Council for endorsement in December 2006.

Enquiries can be addressed to Mr Ron Shanks, Ph 03 9236 5000, email rshanks@ntc.gov.au

Michael Deegan
Acting Chairman

SUMMARY

This proposed policy puts forward NTC's view on taking short rest breaks and proposes alternatives that provide varying levels of driver flexibility based on assurances of risk management and accountability.

The policy proposes a limited increase in flexibility with only minor variation from current regulations. The proposal under the Standard Hours option is:

- 15 minutes rest to be taken within a trip of five hours 30 minutes;
- 30 minutes total rest to be taken within a trip of 8 hours;
- 60 minutes total rest to be taken within a trip of 11 hours;
- minimum length of each break: 15 minutes; and
- provided the above requirements are met the maximum continuous period of driving is 5 hours 15 minutes.

Under the Basic Fatigue Management (BFM) option the proposed policy requires the same total rest times as the standard hours option but affords the driver greater flexibility if required. The proposal under the BFM option is:

- 15 minutes rest to be taken within a trip of six hours 15 minutes;
- 30 minutes total rest to be taken within a trip of 9 hours;
- 60 minutes total rest to be taken within a trip of 12 hours;
- minimum length of each break: 15 minutes; and
- provided the above requirements are met the maximum continuous period of driving is six hours.

While the BFM option offers greater flexibility, it also requires increased accountability through the strict auditing requirements and safety management systems of the National Heavy Vehicle Accreditation Scheme (NHVAS).

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1. INTRODUCTION

Under the proposed national model Heavy Vehicle Driver Fatigue regulations, drivers will be required to take short rest breaks from driving as one means of better managing the fatigue of heavy vehicle drivers.

This policy paper considers the industry view that there is a need for greater flexibility for drivers in taking mandatory short rest breaks. It also reflects the advice from fatigue experts on the role of short rest breaks in achieving better fatigue management. The paper considers the need for greater flexibility against the potential risks and recommends the steps that must be taken under the different fatigue management options to manage the potential risks.

2. BACKGROUND

In January 2004, the Australian Transport Council gave in-principle endorsement to an NTC proposal to introduce changes to the existing driving hours regulations (the 'approved policy'). The approved policy included a requirement to limit the maximum driving period to six hours before a break would be required. The policy was based on fatigue expert advice at that time and also factored in common industry schedules. The approved policy would replace the current maximum 5 hour continuous driving limit with 6 hours continuous driving.

In the original Fatigue Expert Group (FEG) Report 2001¹, the fatigue experts had noted that evidence to support a specific length and timing of short breaks is inconclusive and that boredom, monotony and the need for respite from the driving task were the main reasons why breaks should be available. Experts also noted:

- drivers should take non-work breaks equal to 10% of the total working time in a 1 day period or 30 minute break for every five hours of work;
- short rest breaks are only useful if taken when the driver needs them; and
- drivers should have more flexibility rather than a more prescriptive approach.

However, in the approved policy it is considered that, on balance, in the absence of evidence of adverse implications, the benefits of increased flexibility warrant the extension of the continuous driving period to a maximum of six hours.

2.1 Concerns About the Approved Policy

The proposed change to allow 6 hours was not supported by the Fatigue Expert Group. In their response to the approved policy the experts noted that while the evidence base for allowing six hours continuous driving is not established, this change is probably not consistent with better fatigue management. They argued for the retention of the current 5 hour limit.

¹ Fatigue Expert Group: Options for Regulatory Approach to Fatigue in Drivers of Heavy Vehicles in Australia and New Zealand, National Road Transport Commission, Feb 2001:
<http://www.ntc.gov.au/DocView.aspx?page=A02302405400080020>

Concern regarding the six hour maximum continuous driving time allowed under the approved policy has continued with one particular expert, asserting that it “is likely to have an impact of increasing fatigue risk rather than decreasing it” (Williamson 2004). Ms Williamson argues specifically that:

“The arguments for the advantages of the six hour rule are unjustified because the same fatigue management results can be achieved under the current five hour regime. For example, it is argued that the six hour rule has the advantage of allowing drivers to shorten their work stints as they move through their trip (eg. 6 hours then 4 hours then 2 hours, with half hour breaks), but this is possible under the current five hours rule (eg. 5 hours then 4 hours then 3 hours with half hour breaks). Similarly, it is argued that the proposed six hour rule would meet the needs of drivers who are tired at the beginning of their trip by allowing early rest (eg. 2 hours then 6 hours then 4 hours), however this also can be easily achieved under the current five hour rule (eg. 2 hours then 5 hours then 5 hours).

Probably the most important argument against the proposed 6 hour rule is that it is based on an unfounded contention that it would probably “not lead to a greater fatigue risk”. Reviews of current research evidence on rest breaks show that while there are relatively few studies of the impact of breaks on fatigue, accident risk and performance, most of the research that has been done has looked at rest breaks in driving (Tucker, 2003). The conclusions from these studies indicate that rest breaks are an effective method of reducing fatigue and of maintaining or restoring performance. Lin et al (1994) for example demonstrated that rest breaks especially taken before the sixth hour of driving or during the sixth hour of driving will significantly lower accident risk. The evidence suggests, however, that breaks taken early in the development of fatigue are more effective, that is before there is significant evidence of fatigue or errors in performance. This would argue against extending the length of the allowable period before drivers must take a break.

The evidence also suggests that breaks that are determined by the person in response to their perceived need for a break are more effective in managing fatigue and performance error than breaks taken according to a pre-determined schedule. This evidence also indicates potential problems with the six hour rule. Where companies and drivers use the 6 hour rule to pre-plan breaks, the work duration may be too long in cases where the driver is tired before the scheduled 6 hours break is reached. If the short break rules are being used to pre-plan trips, it would be better to have a shorter period with no break so that drivers who are tired early, but unwilling to break for operational or other non-physiological reasons will not be driving for too long with increasing fatigue and increasing risk for safety.

There is some evidence that also suggests that the frequency of breaks should also depend on the time of day, with more frequent breaks being needed in times where the circadian rhythm is at its low points (eg. mid-afternoon and in the early morning hours). More research is needed to clarify this point.

In the current situation where we know that rest breaks can be effective, but we have comparatively little evidence on the most effective ways of scheduling them, it would seem to be unwise to reduce the frequency of rest for long distance drivers. With little evidence, a prudent road safety authority would be better to either err on a conservative side and increase the frequency of rest (especially during the night period) or to maintain the status quo until further evidence is collected to help in decision-making for the most effective policy.”

3. DISCUSSION

3.1 Driver Needs

Industry strongly argues that there are insufficient numbers of rest areas on some routes with large distances between available rest areas, while on other routes there is insufficient space at the available rest areas for the large numbers of heavy vehicle using that route. Problems also exist with the quality of many rest areas, many with no amenities and/or that suffer from undue noise. The effect of these problems is there are often no rest areas available when needed by drivers or drivers, obtain poor rest due to the poor amenities.

Faced with these problems drivers would prefer to continue, if not fatigued, in order to reach a good quality rest area where amenities such showers and a food area are available, rather than being forced to stop at an area with no amenities.

Feedback from industry has indicated that drivers often break the present requirement either because they are simply not yet fatigued, or they want to reach a better quality rest area.

Providing some flexibility as to when drivers take their short break could be achieved by allowing them to drive for up to six hours before taking the required break. However, drivers should not be allowed to use the flexibility to shorten the trip.

New national rest area guidelines have recently been approved by the ATC (March 2006) and existing rest areas will progressively be upgraded to the new standards. In addition the guidelines will require that new rest areas will be provided where necessary. However, these changes will occur over time and there is a need to address the issue of driver flexibility sooner.

3.2 Are Short Rest Breaks Required?

Drivers tend to allocate themselves breaks, and anecdotal evidence from industry suggests that in many cases drivers have far more frequent breaks than they bother to record. In other words there is a view that there is no need to regulate for drivers to take breaks.

In the US this in fact is the case. The US driving regulations do not mandate short rest breaks. The US position is that “nature takes its course” and drivers take breaks, as they require. They do not need a regulation to tell them to take a short break.

A similar situation to the US applies in New Zealand. Their driving hours laws do not mandate a short rest break. They instead have a daily maximum cumulative working time of 13 hours and a requirement that rest (non-work) time must be a period of at least 30 minutes.

The NTC notes that in the original FEG report the Group concluded that the evidence on short breaks as a fatigue counter measure was not conclusive but there were other reasons, such as boredom, monotony and the need for respite, as to why breaks should be available. The Group also, however, emphasised the importance of flexibility.

There are many causes of fatigue including time spent on a monotonous task. Research shows that long before drowsiness occurs, vigilance for events of a repetitive nature may decline. Undertaking work when one would normally be asleep and cumulative sleep debt from nights of reduced sleep are also causes of fatigue. These considerations indicate that hours spent behind the wheel is not the only, and possibly not the major, cause of driver fatigue.

A break from driving that only involves a change in activity, like unloading the vehicle, refuelling or reading the paper will not produce any significant recuperation. Studies of rest breaks without naps indicate some level of increased performance however these increases were transient. The level of performance increase was less than that resulting from taking caffeine. Rest breaks should not be considered an acceptable alternative to naps or short sleep breaks (Rogers, Dorrian, Dinges 2003).

It is often recommended that sleepy drivers exercise during a break from driving, in order to remain alert at the wheel. Again, there is not substantive supporting evidence. The few relevant findings (Horne 1988) come from studies of sustained total sleep deprivation incorporating long bouts of heavy exercise, with the result that exercise has no beneficial outcome and may even worsen sleepiness. Horne and Foster (1995) have examined the effects of shorter, more practical amount of exercise on less extreme levels of sleepiness. They found that while several subjects reported that the moderate levels of exercise increased their alertness, the effect only lasted for approximately 10-15 minutes after cessation of exercise.

A Harvard University study (Mednick 2002) on cognitive performance found that performance deteriorated progressively throughout the day. Subjects were tested for an hour-long session at 9am, noon, 4pm and 7pm. There was a progressive deterioration in performance between the first and last session. Some subjects took 30 minute and 60 minutes naps after the second session. The 30 minute nappers suffered no further deterioration while the 60 minute nappers were able to take their performance for the remaining sessions back to base level. Another group who did not nap but were offered a financial inducement were not able to prevent the performance decline.

It could be argued that by allowing the driver greater flexibility it would reduce pressure to meet schedules and would allow drivers to utilise rest breaks when they are most beneficial including taking a nap if appropriate. The change would be instrumental in moving away from a culture of working to the maximum permitted periods. Similarly drivers could be expected to benefit from being able to reach rest areas that, for what ever reason, provide for better opportunities to relax and recuperate.

Accordingly it is considered that, on balance, in the absence of evidence of adverse implications, the benefits of increased flexibility warrant the limited extension of the continuous driving period.

3.3 New Emphasis on Fatigue Management

The approved policy sets a range of requirements which in combination will provide for better fatigue management than the existing regulation.

For example, the new chain of responsibility provisions will reduce the pressure from other parties in the supply chain. Drivers cannot effectively manage their fatigue by natural means if the company delivery schedule is unreasonable. Industry fatigue management practices are essential to effectively manage driver fatigue. A range of work practices have been identified which limit fatigue, although few companies have explicit fatigue management policies and industry has some way to go in monitoring the implementation and evaluating the effectiveness of its work practices in limiting fatigue.

Although the amount of rest relative to driving is important, the quality and timing of the rest and the adequacy of recovery between trips also need to be considered.

Concern over the proposed maximum 6 hour continuous driving period relates to a belief that some operators may force drivers to drive for 6 hours continuously and thereby eliminate driver flexibility and risk increasing driver fatigue.

In contrast to the current driving hours regulations the proposed heavy vehicle driver fatigue regulations will require much better management of driver fatigue with increased responsibilities on all parties in the road transport supply chain. Concern about the proposed longer hours can largely be addressed under the proposed new regulations through:

- the introduction of new chain of responsibility provisions which will result in all parties in the road transport supply chain being liable for any breach of the driving and rest hour provisions unless it can be shown the party has taken all reasonable steps to ensure compliance;
- the introduction of a general duty to manage driver fatigue on all parties in the road transport supply chain who will commit an offence if a driver is forced to drive long periods without regard to the risks of driver fatigue;
- the longer continuous rest period of 7 hours and the focus on night rest provided for under the proposed new regulations to ensure the better management of driver fatigue than provided for under the current regulations;
- the provision of new Guidelines on Management of Heavy Vehicle Driver Fatigue;
- the better enforcement powers and increased sanctions under the proposed new regulations to serve as a better deterrent; and
- the increased focus on better fatigue management provided for under the proposed Basic Fatigue Management and Advanced Fatigue Management options provided for under the proposed new regulations which will be supported by the National Heavy Vehicle Accreditation Scheme (NHVAS) with increased auditing providing greater assurances of compliance.

The above measures provide a framework that ensures increased flexibility is supported by better accountability requirements. NTC argues that given these measures, there is some justification for going beyond five hours in the Standard Hours option and providing greater flexibility under BFM and AFM options.

4. REVISED POLICY PROPOSAL FOR MANDATORY SHORT RESTS

Various options have been considered to address concerns of fatigue experts on the one hand, and industry needs on the other. In considering options, the NTC has had regard for the following important factors:

- the driver should have the flexibility, within reasonable safeguards, to rest when they consider it necessary, rather than responding to forced schedules;
- there needs to be assurances of good fatigue management to address any risks;
- emphasis should be on providing longer rest later in the shift during which preventative naps may be taken;

- this is likely to align to the primary circadian trough, for night shifts, and to the secondary circadian trough, for day shifts.

This approach would prevent stacking all the short breaks at the end of a long trip, and would encourage a nap in one of the two circadian troughs. A 20 minute nap, plus the required time before and after would need a period of 30 – 45 minutes.

It would be difficult to argue that this approach would be any less safe than what we have at present. It would allow more flexibility, would encourage strategic napping, and would allow more short breaks to be taken later in a trip, where they are likely to be of more use.

All options discussed below provide for the same total short rest periods but allow greater flexibility.

4.1 Alternatives Considered

Option 1: Retaining the approved policy

The approved policy set a six hour limit before a break would be required. This has been criticised as being unsafe.

Option 2: Retain the current requirement

The 1999 regulations set a limit of five hours maximum continuous driving. This is considered to be too inflexible and there are reports of very poor compliance due to the lack of quality rest areas.

Option 3: Introduce limited flexibility into the Standard Hours option, with greater flexibility in the BFM and AFM options.

This approach would be consistent with the overriding principle that more flexibility can be afforded to drivers in return for greater accountability and better fatigue management.

4.2 Proposed Standard Hours Option

NTC has revised the policy proposal for mandatory short rest breaks under the default Standard Hours option to provide the following minimum short rest breaks:

- 15 minutes rest to be taken within a work period of five hours 30 minutes;
- 30 minutes total rest to be taken within a work period of 8 hours;
- 60 minutes total rest to be taken within a work period of 11 hours;
- minimum length of each break: 15 minutes; and
- provided the above requirements are met the maximum continuous period of work is 5 hours 15 minutes.

4.3 Proposed Basic Fatigue Management Option

Under the Basic Fatigue Management (BFM) option the proposed policy requires the same total rest times as the standard hours option but affords the driver greater flexibility if required. The proposal under the BFM option is:

- 15 minutes rest to be taken within a work period of six hours 15 minutes;

- 30 minutes total rest to be taken within a work period of 9 hours;
- 60 minutes total rest to be taken within a work period of 12 hours;
- minimum length of each break: 15 minutes; and
- provided the above requirements are met the maximum continuous period of work is six hours.

4.4 Proposed Advanced Fatigue Management Option

Advanced Fatigue Management applications will be considered on a case by case basis depending on the risks that may exist with a proposed AFM fatigue management system.

The AFM option whilst having separate operating limits can only be assessed in terms of the interrelationships between the operating limits. Similarly the frequencies which are part of the checks and balances in the option can only be assessed in relation to the overall and cumulative impact they have.

However, the accreditation processes require greater awareness of fatigue and measures to be taken to address risks which through strict auditing will provide assurance that flexibility is balanced by suitable fatigue management countermeasures.

NTC does not therefore propose to prescribe mandatory short rest breaks under the AFM option but instead that the need for mandatory short rest breaks be considered in light of the operator's AFM fatigue management system.

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