REVIEW OF THE NATIONAL IN-SERVICE STANDARD FOR ENGINE BRAKE NOISE

MAY 2013
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>iv</td>
</tr>
<tr>
<td>1. Executive summary</td>
<td>1</td>
</tr>
<tr>
<td>2. Introduction</td>
<td>2</td>
</tr>
<tr>
<td>2.1 Origins of this review</td>
<td>2</td>
</tr>
<tr>
<td>2.2 Scope and method of this review</td>
<td>2</td>
</tr>
<tr>
<td>2.3 About engine brake noise</td>
<td>2</td>
</tr>
<tr>
<td>2.3.1 What are engine brakes and engine brake noise?</td>
<td>2</td>
</tr>
<tr>
<td>2.3.2 What is the impact of excessive engine brake noise?</td>
<td>3</td>
</tr>
<tr>
<td>2.4 Objective of the national standard</td>
<td>3</td>
</tr>
<tr>
<td>2.4.1 How does the national standard work?</td>
<td>3</td>
</tr>
<tr>
<td>3. Responses from states and territories</td>
<td>5</td>
</tr>
<tr>
<td>3.1 What is the extent of engine brake noise?</td>
<td>5</td>
</tr>
<tr>
<td>3.2 How do governments currently manage excessive engine brake noise?</td>
<td>6</td>
</tr>
<tr>
<td>3.2.1 Advisory signs</td>
<td>6</td>
</tr>
<tr>
<td>3.2.2 Vehicle inspections</td>
<td>7</td>
</tr>
<tr>
<td>3.2.3 Information and education</td>
<td>7</td>
</tr>
<tr>
<td>3.2.4 Curfews and access restrictions</td>
<td>7</td>
</tr>
<tr>
<td>3.3 Other ways to potentially address excessive engine brake noise</td>
<td>8</td>
</tr>
<tr>
<td>3.4 Implementation of the national standard for engine brake noise</td>
<td>9</td>
</tr>
<tr>
<td>3.4.1 Trials</td>
<td>9</td>
</tr>
<tr>
<td>3.4.2 Can the national standard be enforced?</td>
<td>11</td>
</tr>
<tr>
<td>4. National heavy vehicle laws and regulator</td>
<td>14</td>
</tr>
<tr>
<td>5. Summary and advice</td>
<td>15</td>
</tr>
<tr>
<td>Appendices</td>
<td>17</td>
</tr>
<tr>
<td>Appendix A: Advice from jurisdictions</td>
<td>17</td>
</tr>
<tr>
<td>Appendix B: Current model laws in relation to engine brake noise limits</td>
<td>38</td>
</tr>
<tr>
<td>Appendix C: Relevant Victorian provisions for the use of speed cameras</td>
<td>40</td>
</tr>
</tbody>
</table>
FOREWORD

Road freight is crucial to our economy and delivers many benefits to Australian communities. However, heavy vehicle traffic can have adverse impacts on those who live along or near freight routes. One of those impacts is noise, and in particular, excessive noise from the engine brakes of heavy vehicles. This type of environmental noise is not just an inconvenience but recognised by the World Health Organisation as harmful pollution that causes adverse psychosocial and physiological effects on human health. Furthermore, those chronically exposed to high levels of environmental noise have an increased risk of cardiovascular diseases, cognitive impairment, and tinnitus (ringing in the ears). Thus, noise pollution is considered not only an environmental nuisance but also a public health issue.¹

In Australia, excessive engine brake noise is a major source of community complaints against the heavy vehicle industry. With heavy vehicle traffic growing and increased urban development occurring along or near major freight routes, the engine brake noise problem is set to increase without effective intervention. The impact on communities can also impact the transport industry itself as a result of increasing community demands for curfews and other restrictions on heavy vehicle movements.

The NTC recognises that where the problem has not been addressed through self-regulation, governments have a role to protect the communities that are affected by adverse impacts such as excessive engine brake noise. This is why, in 2007, we developed the national in-service standard for engine brake noise which provided an objective basis to enable enforcement of the most extreme instances.

This world-leading reform was developed in consultation with industry, government and community stakeholders and was approved by transport ministers for implementation that same year. However, state and territory governments did not implement this reform due to operational and technical issues. In May 2012, the Chair of the Standing Council on Transport and Infrastructure, the Hon. Anthony Albanese directed the NTC to undertake a comprehensive review of the barriers to implementation. This report contains the findings of the review and explores ways to move forward with this important reform for eventual inclusion in the new National Heavy Vehicle Law.

I would like to thank everybody who has contributed to this review, particularly those stakeholders who have shared their valuable time and expertise with us throughout the process.

I would also like to acknowledge the work of Brook Hall and Neil Wong as the major contributors to this report.

Greg Martin PSM
Chairman

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1. EXECUTIVE SUMMARY

Australian communities located near major freight routes are often affected by noise from heavy vehicles, and in particular, their engine brakes. An engine brake is a device fitted to the engine of a heavy vehicle that is used in combination with regular service brakes to help reduce its speed.

In November 2007, Australian transport ministers unanimously approved a regulatory proposal and model law for an in-service engine brake noise standard and testing procedure. If implemented, the standard and laws would provide an objective enforcement approach that defines a limit on the noise emitted from an engine brake device. Despite the approval, no state or territory has since implemented the model engine brake noise laws and excessive engine brake noise remains unregulated.

In the absence of an effective enforcement regime, states and territories have used various methods to address excessive engine brake noise. These have included advisory signs, vehicle inspections, information and education and access restrictions however the problem of excessively noisy engine brakes remains.

In May 2012, the Hon. Anthony Albanese, MP, Minister for Infrastructure and Transport and Chair of the Standing Council on Transport and Infrastructure (SCOTI) requested that the National Transport Commission (NTC) review the model law for engine brake noise in cooperation with the states and territories.

The NTC’s review sought to understand why implementation of the standard has not yet occurred and to provide advice to assist implementation.

Roads and Maritime Services in New South Wales undertook comprehensive trials which concluded that the current model laws can be enforced. Conversely, VicRoads in Victoria argued that many issues need to be resolved before the standard can be enforced.

The Department of Planning, Transport and Infrastructure in South Australia has also run trials and found that breaches of the standard are rare. The department also expressed concern that enforcement of the standard could adversely affect safety.

From mid-2013, a National Heavy Vehicle Regulator (NHVR) will administer a consolidated set of national laws for heavy vehicles. As an agreed reform, the national standard for engine brake noise should be part of these new national laws however, it has not been included as yet. The NTC reviewed the existing model laws and determined that they were adequate for inclusion in the national laws. However the Transport and Infrastructure Senior Officials’ Committee (TISOC) decided that the introduction of the national standard for engine brake noise should be delayed until the technical and operational issues are addressed.

The NTC identified the outstanding issues to enable effective enforcement of the engine brake noise standard as:

1. procedures for calibration, certification and use of monitoring equipment for engine brake noise are needed to support the national laws
2. the existing test procedures require amendments to address the known problem with the background noise level
3. operational and enforcement procedures are needed to avoid any driver safety risks as well as addressing safety risks to operators of the noise monitoring equipment.

The Roads and Maritime Services NSW are currently developing these technical and operational procedures. Once these procedures are complete, the NTC will begin the process to introduce the laws for engine brakes into the national laws.

As an interim measure, states and territories can use their existing programs and legal tools to address excessive engine brake noise to meet community expectations.
2. INTRODUCTION

2.1 ORIGINS OF THIS REVIEW

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.

In November 2007, the Australian Transport Council (ATC)—the predecessor to the Standing Council on Transport and Infrastructure (SCOTI)—unanimously approved a proposal and model law for an in-service standard and testing procedure to manage excessive engine brake noise. Implementation of the standard was expected to occur within 12 months of the approval; however, the standard has not yet been implemented by any state or territory.

In May 2012, The Hon. Anthony Albanese, MP, Minister for Infrastructure and Transport and Chair of SCOTI requested that the NTC review the model law for engine brake noise in cooperation with the states and territories. The minister’s request was prompted by correspondence from The Hon. Terry Mulder, MP, Victorian Minister for Roads, about problems enforcing the national model law for the in-service noise standard for engine brake noise.

The NTC finalised this report in December 2012 and planned to provide it directly to transport ministers at this time. However, a general direction from the 2012 review of the National Transport Commission and other relevant transport bodies is that all advice should be provided through the formal meeting of transport ministers. As such, this report was submitted to the next meeting of ministers in May 2013.

2.2 SCOPE AND METHOD OF THIS REVIEW

The objective of this review was to investigate the implementation and enforcement of the national in-service standard for engine brake noise and to provide advice to SCOTI. The review focuses on problems implementing and enforcing the standard and explores other interim approaches that can be used to reduce the impact of excessive engine brake noise on the community.

2.3 ABOUT ENGINE BRAKE NOISE

2.3.1 WHAT ARE ENGINE BRAKES AND ENGINE BRAKE NOISE?

An engine brake is a device fitted to the engine of a heavy vehicle to help slow the vehicle down. Engine brakes are often referred to as ‘auxiliary braking devices’ or ‘secondary retarders’. They are generally not capable of stopping the vehicle, but can very effectively slow the vehicle, even on a steep descent. Engine brakes are not the only form of secondary retarder. Others include exhaust brakes, hydraulic retarders, electromagnetic retarders (these are less common in Australia) and regenerative brakes (not readily available or regularly used in Australia or elsewhere, but it is anticipated that their use will become more common).

Service brakes of a particular standard are required by the Australian Design Rules and in-service standards. The use of secondary retarders saves wear on service brakes, reducing vehicle maintenance costs. There is generally little or no wear associated with use of secondary retarders, making them a cheap and efficient braking device.

Most forms of braking devices emit some form of noise. There is sometimes a ‘squeal’ associated with the use of service brakes, a ‘rumble’ associated with an exhaust brake and a ‘whine’ with a hydraulic retarder. These
noises are often well known to people in the heavy vehicle industry, but are rarely a source of community complaint, even when the muffler becomes degraded.

However, engine brakes, particularly valve-actuated engine brakes commonly used on vehicles made in North America, are often associated with a distinctive staccato sound. This distinctive sound is often the source of community complaints, and has led to government action, such as signs discouraging the use of engine brakes.2

The engine brake remains the favoured form of secondary retarder for heavy vehicles in Australia because it is lightweight, effective and inexpensive. It also reduces wear on normal brake components, adding an economic incentive for its use. It is, therefore, unlikely that other forms of secondary retarder will replace the engine brake in the short term. The company that manufactures most of the engine brakes currently in use in Australia sees the noise problem as a muffler problem, not a problem stemming from the design of the engine brake.3

Not all vehicles fitted with engine brakes produce excessive noise. Heavy vehicles fitted with engine brakes with good muffler systems produce minimal noise effects on the community. The owners of heavy vehicles with excessive noise from engine brakes externalise the cost of reducing wear and maintenance of the service brakes to the community in the form of noise.4

2.3.2 WHAT IS THE IMPACT OF EXCESSIVE ENGINE BRAKE NOISE?

Excessive noise from engine brakes is a major source of community complaint against the heavy vehicle industry. Transport authorities view it as a growing problem that has the potential to adversely affect the movement of goods around the country, because communities are demanding that road access to heavy vehicles be restricted due to excessive noise. The problem is compounded by a range of factors, including:

- strong growth in the projected freight task
- strong growth in the articulated vehicle fleet
- population growth, combined with limited road infrastructure development, leading to greater numbers of people living in affected areas5
- growth of the freight task being moved at night or on weekends (when the community is less tolerant of excessive noise, i.e. at preferred quiet times).

Importantly, the problem is not one solely for people living on main roads in cities. Complaint registers indicate noise from engine brakes affects both rural and urban populations, and people living a considerable distance from main roads.

2.4 OBJECTIVE OF THE NATIONAL STANDARD

The national in-service standard for engine brake noise aims to reduce excessive noise from engine brakes and to reduce its impact on the community.

The standard targets the annoyance factor of noise from engine brakes caused by modulation. It does not, however, attempt to restrict the use of engine brakes.

Research data suggests that the standard will have an impact on up to two per cent of the heavy vehicle fleet,6 that is, only the most extreme cases.

2.4.1 HOW DOES THE NATIONAL STANDARD WORK?

If implemented as part of state and territory laws, the engine brake noise standard would provide an objective enforcement approach that defines a limit on the noise emitted from the engine brake device fitted to a vehicle. If the noise of an engine brake exceeds the national standard,7 the operator of the vehicle commits an offence.

The model law does not specify any penalty, allowing jurisdictions to define them individually. However, the model laws notes that:

7. The prescribed noise limit is a modulated root mean square (RMS) of 3.0.
It is intended that first offenders will be dealt with by way of a warning that includes information as to how a repetition of the offence can be prevented.

The model laws allow for enforcement of the standard using enforcement personnel equipped with relatively simple testing equipment or a purpose-built automated noise camera, as approved by the enforcing jurisdiction. Enforcement of the standard is supported by a testing procedure that defines the use of noise measuring equipment, test sites and microphone locations, and testing method.

The model laws describe a desired evidentiary standard for the use of noise camera technology. This includes the capturing and recording of one or more images of the vehicle together with details of the measured modulated root mean square (RMS) and the date, time and place at which the noise event occurs.

The use of noise cameras offers the potential for the incidents of noisy engine braking to be identified and recorded, which will provide a useful tool for enforcement agencies. However, this is not the only type of measuring technology available under the model laws.

Based on the analysis of each of the above options, the in-service standard was determined the most objective approach and presents a range of enforcement options.

As the final proposal concluded, there are many options to address excessive noise from engine brakes, but many are inequitable or ineffective.

NON-REGULATORY OPTIONS:
- education programs
- advisory signs
- inclusion in industry alternative compliance schemes
- noise abatement along sensitive routes.

REGULATORY OPTIONS:
- enforcement of existing laws
- restricting the use of engine brakes with modulation from certain routes
- introducing an Australian Design Rule to limit engine brake noise in new vehicles
- banning the use of engine brakes

...and more.
3. RESPONSES FROM STATES AND TERRITORIES

The National Transport Commission (NTC) sent letters to the states and territories seeking information to inform this review (see Appendix A). The agencies that provided responses were:

- Roads and Maritime Services, New South Wales
- VicRoads, Victoria
- Department of Planning, Transport and Infrastructure, South Australia
- Department of Transport and Main Roads, Queensland
- Department of Transport, Western Australia
- Department of Infrastructure, Energy and Resources, Tasmania
- Justice and Community Safety Directorate, Australian Capital Territory
- Department of Transport, Northern Territory.

In the rest of this document, these organisations are referred to by the jurisdiction that they represent.

3.1 WHAT IS THE EXTENT OF ENGINE BRAKE NOISE?

States and territories were asked to provide advice on the extent that engine brake noise causes a problem in their community and to include any information (survey data or other metrics) that helps describe the problem.

Victoria, New South Wales, South Australia and Queensland said that engine brake noise continues to be a significant concern for their communities. Western Australia and Tasmania said that engine brake noise is small and localised. The Australian Capital Territory and the Northern Territory said that engine brake noise is not a problem for their communities.

Community complaints are the main way states and territories describe the extent of the noise problem. Some states and territories indicated the number of complaints received.

For example, Tasmania on average has around two complaints per month. Queensland had four complaints in 2003 and 21 complaints in 2011. Other states broadly described the extent of community complaints as a measure of the extent of engine brake noise problem; for example, South Australia said they had ‘frequent complaints from members of the community’. Most complaints came from residents in close proximity to major freight routes where trucks were required to slow on descents or to enter intersections primarily in metropolitan areas, although complaints also extended to some regional and rural areas.

While complaints are sufficient to establish that engine brake noise continues to be a problem and to confirm the specific locality of the issue, they do not provide adequate information to measure the extent of the problem, that is, the proportion of the community affected by the noise and the extent to which they are impacted by it.

KEY POINTS

Victoria, New South Wales, South Australia and Queensland said engine brake noise was a significant concern for their local communities.

Western Australia and Tasmania consider the problem of engine brake noise small and localised.

The Australian Capital Territory and the Northern Territory do not consider that engine brake noise is a problem for their communities.

States and territories have no information about the extent of the population exposed to excessive engine brake noise. Instead, they provide information on community complaints. These complaints show that engine brake noise continues to be a problem along freight routes in populated areas.
3.2 HOW DO GOVERNMENTS CURRENTLY MANAGE EXCESSIVE ENGINE BRAKE NOISE?

States and territories have identified four ways they use to reduce engine brake noise and its impacts on the community.

FIGURE 1: WAYS STATE AND TERRITORY GOVERNMENTS MANAGE EXCESSIVE ENGINE BRAKE NOISE

3.2.1 ADVISORY SIGNS

All states and territories have used roadside signs to advise drivers to limit the use of engine or compression brakes in populated areas. Queensland, New South Wales and Victoria have developed guidelines for where and when to use advisory signs, while the Northern Territory have erected signs in response to specific complaints.

Advisory signs were placed on all the major truck routes into the Brisbane area. Queensland said this approach was ineffective as the overuse of signs was found to detract from their impact, particularly without enforcement provisions.
3.2.2 VEHICLE INSPECTIONS
Some jurisdictions require vehicle inspections to ensure that in-service vehicles are able to operate safely and do not produce excessive emissions (including noise emissions). Inspections of a vehicle’s mufflers can identify worn, altered or defective mufflers which can contribute to excessive engine brake noise. Queensland, Western Australia and Tasmania each identified their state’s vehicle inspection regimes as one of their management strategies for engine brake noise.

3.2.3 INFORMATION AND EDUCATION
A number of jurisdictions discussed collaborative approaches with the heavy vehicle industry to address excessive engine brake noise or undesirable use of engine brakes in built-up or populated areas. Victoria, Queensland and Tasmania identified industry-based educational programs, New South Wales liaised with the industry, and Victoria also helped develop industry codes of practice and companies policies.

3.2.4 CURFEWS AND ACCESS RESTRICTIONS
Curfews and access restrictions attempt to separate vehicle noise from the community at times when they are most sensitive (e.g. night-time curfews) or in sensitive areas (e.g. limiting access to local roads in residential areas).

Victoria has established both night-time and 24-hour truck curfews on some local and arterial roads to limit heavy vehicle operation and noise. However, Victoria’s curfews still permit trucks that have a destination in the area, providing there is no alternative route. This makes curfews difficult to enforce. Furthermore, the curfews are contrary to strategies encouraging night time freight operations that maximise the use of limited road assets.

Queensland restricted access to heavy vehicles to the Brisbane Urban Corridor in April 2007 to improve congestion and road safety. The restriction was later considered as part of the overall strategy to reduce the use of engine brakes in urban areas; however, monitoring indicated that noise issues were relocated to surrounding areas.

FIGURE 2: ONE OF QUEENSLAND’S ADVISORY SIGNS (LEFT); A VICTORIAN ADVISORY SIGN (RIGHT).
KEY POINTS
States and territories have used different ways to address excessive engine brake noise. These include advisory signs, vehicle inspections, information and education, and access restrictions.

Despite these measures, excessive engine brake noise still impacts the community.

3.3 OTHER WAYS TO POTENTIALLY ADDRESS EXCESSIVE ENGINE BRAKE NOISE

Victoria has been exploring other ways to address excessive engine brake noise. The following text is from the Victorian response:

VicRoads is currently exploring the feasibility of banning the use of engine brake in urban areas except in emergency situations. Legal advice is being sought regarding VicRoads’ ability to issue an ‘on-the-spot’ fine rather than requiring the matter be taken to court. Initial legal advice indicates relying solely on ‘subjective’ evidence for an enforcement officer would not enable a fine to be issued. That is, the use of a sound meter or some other form of sound measuring equipment that clearly identifies that the vehicle is excessively noisy would be required to support the observation of the enforcement officer.

Queensland reported that noise barriers and other attenuation strategies are not particularly effective for isolated noise events such as engine braking.

All jurisdictions also have existing laws that could be enforced that could help address excessive engine brake noise. These include road rules and other regulations.

Australian Road Rule Regulation 291 on making unnecessary noise or smoke could be applied to engine brake noise. It regulates that:

A person must not start a vehicle, or drive a vehicle, in a way that makes unnecessary noise or smoke.

Each jurisdiction’s laws contain an example of what may constitute as ‘unnecessary noise or smoke’ relating to burnouts. The Queensland regulations, however, contain an additional example that more closely resemble engine brake noise. This is:

Driving a vehicle in a way that causes noise or smoke because of—
(a) disrepair of the vehicle; or
(b) the way the vehicle is loaded; or
(c) the condition, construction or adjustment of the vehicle’s engine or other equipment.11

Examples (a) and (c) in particular could reasonably be applied to worn, defective, or altered mufflers that may cause excessively noisy engine braking.

The Victorian ‘hoon laws’ may also provide a potential legal basis for enforcement of engine brake noise. Under these laws, a second tier offence includes ‘causing unnecessary noise and smoke in circumstances involving improper use of a vehicle’.12 Similar laws exist in some other states.

It could be argued that engine brake noise is unnecessary when it occurs:

• when a vehicle’s mufflers are worn, defective or altered
• at particularly sensitive times or locations
• in road or traffic conditions that do not warrant engine braking.

Furthermore, Section 251 of Victoria’s Road Safety (Vehicles) Regulations 2009 states that:

A person must not use, cause or permit a vehicle to be used on a highway if the vehicle is creating undue noise.

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The application of these laws would involve a subjective assessment by an enforcement officer, that is, it would rely on their opinion of whether the driver was causing unnecessary or undue noise based on the enforcement officer’s observation of the noise event. This would be a subjective assessment, and would likely need to be enforced via a court, where the enforcement officer’s claims would be tested. However, a more objective assessment could be achieved if some objective criteria were established around the above subjective elements.

In fact, Victoria has already used the Road Safety (Vehicles) Regulations 2009 as part of its on-road surveillance of engine brake noise to issue engine brake noise notifications requiring the vehicle to be tested (see Section 3.4.1 below for details).

3.4 IMPLEMENTATION OF THE NATIONAL STANDARD FOR ENGINE BRAKE NOISE

As discussed earlier, the in-service engine brake noise standard and associated model laws were approved in November 2007. Some states have run trials to detect heavy vehicles exceeding the standard, and to get a better understanding of the operational procedures and testing equipment capabilities.

To date, no jurisdiction has incorporated the national standard into their laws.

3.4.1 TRIALS

NEW SOUTH WALES

At the time of the Australian Transport Council’s agreement of the in-service standard the available camera recording device did not meet all of the NSW requirements for it to be used for enforcement purposes. NSW undertook further testing to refine the noise camera technology and systems and a new generation camera was fully commissioned in 2009. This camera was used for the engine brake noise awareness and education programs over 2009 and 2010.

A trial was run at Mt Ousley in Wollongong. Industry was consulted about the trial. During the trial operators of trucks that were recorded exceeding the in-service engine brake noise standard were notified that their vehicle had exceeded the standard and advised what they could do to fix the problem.

As a result of the trial there was a 50 per cent reduction in the number of exceedences of the in-service standard during the education program. It also found that five per cent of the vehicles exceeding the standard were responsible for 40 per cent of detections, demonstrating that a number of habitual offenders caused a disproportionate part of the problem and were unresponsive to the educational program.

A second noise camera was installed in 2010 at Woolgoolga on the Pacific Highway, north of Coffs Harbour. There was broad publicity about the installation of this noise camera and its purpose to detect excessively noisy engine brakes. However, no advisory letters were issued to vehicles detected exceeding the in-service standard. The installation of the noise camera at Woolgoolga saw a significant reduction in the number of detections of the in-service standard.

Communities at both Mt Ousley and Woolgoolga reported significant reductions in noisy engine brakes as a result of these trials; although there is some evidence there may be a halo effect in the area surrounding the noise cameras. The community at Mt Ousley have also reported an increase in the number of noisy engine brakes following the completion of the trial education program.

The conclusion of the trials was that:

- the national in-service standard could be used to effectively identify excessively noisy engine brakes;
- the use of warning letters as a first response in enforcement action provide operators with clear feedback on the performance of their vehicles and resulted in reduction of exceedences; and
many truck operators responded to the education campaign and effectively reduced their vehicle’s engine brake noise. However, a small but significant number of operators did not respond to the program and continued to impact the community with excessively noisy engine brakes.

New South Wales noted that:

“this result is consistent with other behavioural change programs, that is, enforcement measures are usually necessary where high levels of compliance are required to achieve the outcome sought.”

VICTORIA

Between March and December 2010, Victoria conducted on-road surveillance targeting excessively noisy heavy vehicles. The surveillance used basic mobile ‘noise camera’ equipment at 24 ‘hot-spots’ around Victoria (11 rural and 13 metropolitan). Under the surveillance program, registered operators of trucks identified as excessively noise were sent a notice requiring them to present the vehicle to an approved Environmental Protection Authority Victoria station for testing. Vehicles that failed were required to be rectified and re-tested. Once a pass was awarded, a report was provided to VicRoads. Operators who failed to comply with the requirement to present their vehicle to a testing station had their truck’s registration suspended.

As a result of the surveillance, 81 notices were issued to operators of trucks identified as excessively noisy. The registrations of five vehicles were suspended for not complying with the notice.

Due to unresolved issues (detailed below), Victoria recommenced a four-month program of surveillance between May and October 2012 across 12 metropolitan and 10 rural sites. As a result of this surveillance, VicRoads issued 27 notices.

FIGURE 3: A TRIAL ENGINE BRAKE NOISE CAMERA IN MELBOURNE
SOUTH AUSTRALIA
South Australia has operated noise cameras at strategic locations over the past few years to objectively measure the extent of the issue and the opportunity that enforcing the national standard may offer. South Australia found that, ‘less than one in every thousand heavy vehicle pass-bys resulted in a detection that exceeded the national standard’.

OTHER STATES
Queensland and Western Australia have indicated that they are awaiting the results of these trials and resolution of the issues identified. Queensland stated that it ‘is reluctant to act unilaterally on an issue that impacts an industry that regularly moves between jurisdictions and has consistently requested simplified national laws’.

3.4.2 CAN THE NATIONAL STANDARD BE ENFORCED?

NEW SOUTH WALES
New South Wales acknowledges that there are a number of issues raised by other jurisdictions that do need to be addressed in implementing the national standard. However, New South Wales believes that many of the issues, such as safety of enforcement officers, false positives, certification and calibration and evidentiary procedures, are all issues that have been resolved for speed and smoky vehicle camera systems and are not regarded as significant impediments to enforcing the standard for New South Wales.

New South Wales acknowledges that there are a number of issues raised by other jurisdictions that do need to be addressed in implementing the national standard. However, New South Wales believes that many of the issues, such as safety of enforcement officers, false positives, certification and calibration and evidentiary procedures, are all issues that have been resolved for speed and smoky vehicle camera systems and are not regarded as significant impediments to enforcing the standard for New South Wales.

Based on its experience in enforcing speed camera and smoky vehicle camera regulations, NSW does not envisage that enforcement of an engine brake noise regulation will be problematic.

New South Wales also identified some minor technical issues surrounding the testing procedure. These issues are not expected to prevent enforcement of the standard.

Overall, New South Wales contends that the engine brake noise standard can be applied using current technologies according to the national standard under the agreed model laws.

VICTORIA
Victoria’s submission outlines issues that would need to be overcome for the national standard to be enforced.

False positives
Victoria developed a static noise camera system that can be monitored remotely. However, in developing this system, an issue with the algorithm defined in the testing procedures for the national standard was identified. This technical issue reportedly resulted in a large number of false positives caused by other vehicles or objects, such as excessively noisy exhausts on cars and motorbikes, and the rattling and clanking of loads moving about on trucks, triggering the camera. These false detections require footage of the detection to be reviewed to ensure that a breach has occurred. Victoria’s Department of Justice advised that any...
third-party verification of the recordings adds a subjective element to the detection, which may require the enforcement officer to present evidence in court.

Background noise levels in the noise test procedures

The test procedures supporting the national standard require that ‘measurements should be made in the open air where both the ambient and wind noise levels (i.e. background noise) are below 50 dB (A)’ and modulated Root Mean Square (RMS) of the ambient noise shall be no more than 0.5.\(^{15}\) Victoria has reported that the majority of sites identified as engine brake noise ‘hot-spots’ are frequently above these levels with recent surveillance testing confirming this.\(^{16}\)

Certification and calibration

In late 2009, Victoria’s Department of Justice advised that ‘it would not support the introduction of the necessary legislation as it was not satisfied that the technology required to enforce the engine brake noise standard would meet the stringent requirements of testing and sealing—in particular, a mechanism to ensure the security of the camera data when it is accessed remotely.’

Victoria also notes that due to the complexity of the RMS modulation algorithm it is difficult for the operator of a truck to know whether the engine brake noise produced exceeds the RMS modulation limits defined in the national standard. Victoria also suggests that it may also be difficult for a magistrate to understand the nature of the algorithm and hence understand how to deal with offences.

Fairness

Victoria is also concerned that an argument could be made that it is unfair to vehicle owners that an in-service standard would exist where no original equipment standard exists. It has not been conclusively demonstrated that a truck that complies with the Australian Design Rule noise limit to which it was manufactured (i.e. ADR 28 or ADR 83) would comply with the proposed in-service standard.

Safety of enforcement officers

A key operational issue is the safety of the operator of the noise detection device. The mobile noise camera system tested requires an operator to deploy and monitor the device. As a result, this particular equipment is only suitable at sites where safe for operators, ruling out many engine brake noise hot-spots, such as those along metropolitan freeways.

SOUTH AUSTRALIA

South Australia said that it had not pursued implementation of the national standard because, ‘breaches of the standard at a given location would occur rarely, even on our busiest freight routes (that is, the community is unlikely to perceive any benefit)’. South Australia said, ‘other jurisdictions, using the same detection and camera technology, have been unable to achieve an appropriate evidentiary standard for prosecution of engine brake noise offenders’.

\(^{15}\) National Transport Commission 2007, National in-service test procedures for engine brake noise from heavy vehicles, National Transport Commission, Melbourne, ss. 3.3–3.4, p. 2.

\(^{16}\) Mr J McIntosh [VicRoads] 2012, personal communications., 12 October.
South Australia also expressed concern about dissuading drivers from using engine brakes to avoid noise detection where avoidance of braking presents a safety risk (e.g. on a steep descent).

**OTHER STATES**

Queensland and Western Australia acknowledged the ‘issues’ encountered by other states as reasons for not pursuing implementation in their own jurisdictions:

- ‘The lack of an agreed effective technology that will enable enforcement of the standard remains the main obstacle that has delayed the implementation of the national standard in Queensland’
- ‘Western Australia is aware of the technical problems that have been experienced by other jurisdictions in the use of the prescribed noise camera to detect breaches of the standard… and has not implemented the proposed standard or the associated regulations’

**KEY POINTS**

No state or territory has implemented the model engine brake noise laws into their transport legislation.

Trials to better understand enforcing the standard have been conducted in New South Wales, Victoria and South Australia. Queensland and Western Australia have been monitoring the results of these trials.

New South Wales has undertaken the most comprehensive trials of the standard to date in Australia. New South Wales concludes that the current model laws can be enforced.

Victoria argues that many issues need to be overcome before enforcement of the standard is possible.

South Australia has run trials but found that breaches of the standard are rare. South Australia also expressed concern that enforcement of the standard could affect safety.
4. NATIONAL HEAVY VEHICLE LAWS AND REGULATOR

In 2008, the former Australian Transport Council (ATC) announced the development of a national regulator for heavy vehicles. As part of this reform, the regulator would administer one nationally consistent set of rules for Australia's heavy vehicle owners, operators and drivers.

Since 2008, much progress has been made, including the development of a set of national heavy vehicle laws for Australia. These laws will be implemented by an applied law approach, whereby the content of the laws will initially be introduced into Queensland's laws. Subsequently, other states and territories will repeal their current heavy vehicle laws and introduce an applying law that points to the Queensland law. In this way, the heavy vehicle laws will be nationally consistent.

There have been two Acts passed by the Queensland Parliament to date. Further, the Queensland Parliament is expected to introduce the national regulations in early 2013, and a National Heavy Vehicle Regulator will start administering these laws from the middle of 2013.

As the national standard for engine brake noise was approved by the former ATC as part of the Australian Vehicle Standards Rules, this standard should be incorporated into the national laws for heavy vehicles. However, they have not been put into the national law as yet.

NTC reviewed the model laws and deem them sufficient for inclusion in the national laws however additional technical and operational procedures are required to support them.

The Transport and Infrastructure Senior Officials’ Committee (TISOC) have agreed that the introduction of the national standard for engine brake noise should be delayed until the technical and operational issues are addressed. This is further discussed in the next section.

KEY POINTS

A national regulator and laws for heavy vehicles are being developed.

As an agreed reform, the national standard for engine brake noise should form part of the national laws. However, it has not been included in the national laws as yet.

States and territories have agreed that the introduction of the national standard for engine brake noise should be delayed until the technical and operational issues are addressed.
5. SUMMARY AND ADVICE

To date, the national standard for engine brake noise has not been introduced into state or territory laws. Some states have raised concerns about enforcing the standard as presented in Section 3.4.2. However, many of these issues were discussed in the proposal that the (former) Australian Transport Council (ATC) approved or were known about during the development of the standard.

Victoria raised the issue of false positives, however, during the development of the standard, false positives were recognised and the need for third party verification was known. If the standard is enforced by an enforcement officer, the officer can use their judgement to identify which events are caused by excessively noisy engine brakes and which events are false positives. The officer can then reject the false positive detections at the roadside. If the monitoring uses an automated engine brake noise camera, an enforcement officer will need to review a recording of the events to identify the false positives.

Victoria also raised the issue that the current model legislation does not meet the stringent requirements of testing and sealing—in particular, a mechanism to ensure the security of the camera data when it is accessed remotely. The National Transport Commission (NTC) notes that similar issues have been resolved for speed camera programs across Australia (Appendix C contains provisions in the Victorian Act and regulation for testing, sealing and use of speed camera devices). Therefore, the national heavy vehicle law requires provisions for testing, sealing and use of the monitoring equipment for engine brake noise. Furthermore, provisions for certification and calibration are also needed. These operational procedures should address Victoria’s concerns.

In addition, Victoria raised the issue of having to change the testing procedures because they refer to testing in areas where the background noise levels are below 50 dBA. The NTC is aware of this problem, and it can be easily resolved through changes to the test procedures by either raising or removing the background noise limit.

Victoria is also concerned that an argument could be mounted that it is unfair to vehicle owners that an in-service standard would exist where no original equipment standard exists. Victoria argues that it has not been conclusively demonstrated that a truck that complies with the Australian Design Rule noise limit to which it was manufactured (i.e. ADR 28 or ADR 83) would comply with the proposed in-service standard. The regulatory impact statement addressed this issue:

Testing undertaken as part of developing this policy proposal found that new heavy vehicles produced little modulation from engine brakes. In one series of tests at Anglesea in Victoria, only new trucks were used. It was clear that manufacturers were already using high quality mufflers as nearly all of these new trucks showed low modulation characteristics and were not considered offensive by the personnel on-site. There was one exception; the vehicle only had a single exhaust pipe and muffler and a powerful 570 horsepower engine. The manufacturer of this vehicle concluded that the noise from the engine brakes could be significantly lowered if the exhaust was converted to a twin pipe system that would have two mufflers.

This new vehicle testing showed a RMS range between 0.9 to 2.1. This demonstrates that new vehicles are already able to meet an in-service standard of RMS of 3.

The problem of noise from engine brakes is generated when the vehicle is in-service, and not when the vehicle is new. Therefore, it is not effective to address noise from engine brakes through new vehicle standards.17

Victoria also warned about the safety of enforcement operators deploying, monitoring or operating noise measurement devices.

Again, these issues have been similarly addressed with the mobile speed camera program where operational guidelines describe roadside environments where it is safe to operate.

South Australia also expressed concern about dissuading drivers from using engine brakes to avoid noise detection where avoidance of braking presents a safety risk (e.g. on a steep descent). A simple way to avoid this risk is to not enforce the standard on steep descents where safety may be an issue. This direction could be included in the operational procedures mentioned above.

Victoria raised the issue that it will be difficult for the vehicle owner to determine whether their heavy vehicle exceeds the national standard. However, it should be quite obvious to the vehicle owner that the engine brake makes excessive noise. The standard was set at a level that addresses the worst excessively noisy engine brakes from a community perspective. In addition, the enforcement of the standard could be undertaken so that the vehicle owner gets a formal warning about exceeding the standard for the first offence. This formal warning could have a time period (e.g. 30 days) before any further enforcement action will be taken. This will give the vehicle owner time to get their vehicle fixed. Research in developing the standard showed that fitting good quality mufflers will address the noise problem.

The NTC identified the outstanding issues to enable effective enforcement of the engine brake noise standard as:

1. procedures for calibration, certification and use of monitoring equipment for engine brake noise are needed to support the national laws
2. the existing test procedures require amendments to address the known problem with the background noise level
3. operational and enforcement procedures are needed to avoid any driver safety risks as well as addressing safety risks to operators of the noise monitoring equipment.

In a meeting in January 2013, the Transport and Infrastructure Senior Officials’ Committee (TISOC) agreed to resolve these outstanding issues before the national standard for engine brake noise is included in the national heavy vehicle laws. This work is being progressed by the NTC and jurisdictions, in consultation with the national regulator, as part of the future work program for the national heavy vehicle laws.

In the interim, it is recommended that governments use their existing programs and legal tools to address excessive engine brake noise to meet community expectations.

**KEY POINTS**

There are differing views about whether the national standard for engine brake noise can be enforced.

While the NTC contends that the existing model laws are adequate for inclusion in the national laws, the Transport and Infrastructure Senior Officials’ Committee (TISOC) decided that the introduction of the national standard for engine break noise should be delayed until the technical and operational issues are addressed.

The Roads and Maritime Services NSW are currently developing these technical and operational procedures. Once these procedures are complete, the NTC will begin the process to introduce the laws for engine brakes into the national laws. Once these laws have been incorporated into the national laws, the standard will be enforceable.

In the interim, governments can use their existing programs and legal tools to address excessive engine brake noise to meet community expectations.
APPENDICES

APPENDIX A: ADVICE FROM JURISDICTIONS

The Hon. Duncan Gay MLC
Deputy Leader of Government in the Legislative Council
Minister for Roads and Ports

Mr Greg Martin
Chairman
National Transport Commission
Level 15, 68 Bourke Street
Melbourne VIC 3000

Dear Mr Martin,

Thank you for your letter regarding a review of the national in-service test standard for heavy vehicle engine brake noise. I note that you have also written to my colleague, the Hon Gladys Berejiklian MP, Minister for Transport and to Mr Peter Duncan, Chief Executive, Roads and Maritime Services on this matter. Please accept this response as a reply to these letters.

Excessive heavy vehicle engine brake noise continues to be a major source of annoyance for communities throughout NSW. The NSW Government therefore welcomes the opportunity to participate in the review.

NSW is an active supporter of the national in-service standard and has continued to develop and refine noise camera technology and trial its use at Mt Ousley and Woolgoolga. Details of the trials and their findings are included in the attached submission prepared by Roads and Maritime Services (RMS), which provides the information requested in your letter.

I understand that Mr Brook Hall from your office has met on 23 July with officers from both RMS and Transport for NSW regarding the review, and that arrangements for ongoing liaison are in place to support the review.

I hope this has been of assistance. For more information please contact Ms Erica Adamson, RMS General Manager, Environment, on (02) 8588 5730.

Yours sincerely,

Duncan Gay MLC
Deputy Leader of Government in the Legislative Council
Minister for Roads and Ports

Encl
Review of the National In-service Standard for Heavy Vehicle Engine Brake Noise

Submission prepared by NSW Roads and Maritime Services

The size of the current problem of engine brake noise in NSW

Excessive heavy vehicle engine brake noise remains a major source of community annoyance in both urban and rural communities. The extent of the problem is demonstrated primarily through complaints and requests for action to address or mitigate the effects of noisy engine brakes.

The majority of noise-related complaints received by Roads and Maritime Services (RMS) identify engine brake noise as a significant source of annoyance. This issue has the potential to adversely affect the movement of goods as communities seek to restrict heavy vehicle access due to excessive noise.

NSW current approach to managing engine brake noise

NSW has traditionally used a broad brush educational approach to engine brake noise through a combination of industry liaison and road signs, to encourage operators to avoid using noisy engine brakes in residential areas. With the development of the in-service standard, NSW has trialled the use of noise camera technology to target awareness and educational campaigns to operators whose vehicles exceeded the in-service standard (see details below).

NSW is currently evaluating the results of these trials to determine the most appropriate next steps for addressing this issue.

NSW experience in implementing the regulations for national standard for engine brake noise

NSW worked closely with the NTC and other states to develop the in-service standard for engine brake noise. This included the development of a camera recording device to identify and record details of vehicles which exceeded the standard. However, when the in-service standard was approved, the available camera recording device did not meet all of the NSW requirements for it to be used for enforcement purposes.

Mt Ousley noise camera

NSW therefore used the Mt Ousley site, which had been used during the development of the standard for the trialling and further refining of the noise camera technology and systems. A new generation camera based on speed camera technology was fully commissioned in 2009. This camera was the focus of an engine brake awareness and education program over 2009 and 2010.

RMS' trial involved consultation with the freight industry to advise them of the purpose of the trial and to build support within the industry for addressing this issue.
During the trial letters were sent to operators of trucks that were recorded exceeding the in-service standard. The letters notified the operator that their vehicle had exceeded the engine brake noise in-service standard and advised them what they could do to fix the problem. The letter also advised operators that this notification was part of an education process prior to the introduction of a regulatory framework to enable them to take appropriate measures to avoid future enforcement action.

The key findings of the trial:

- Confirmed that the in-service standard could be used to effectively identify excessively noisy engine brakes. The trial also identified some potential minor amendments to the standard that could improve reliability and repeatability of compliance measurement.
- There was a 50 per cent reduction in the number of exceedances of the in-service standard during the education program.
- Of the vehicles exceeding the standard at the end of the trial, five per cent were responsible for 40 per cent of detections.

**Wooloolga noise camera**

A noise camera was installed at Wooloolga in 2010. There was broad publicity about the installation of this noise camera and its purpose to detect excessively noisy engine brakes. However, no advisory letters were issued to vehicles detected exceeding the in-service standard. The installation of the noise camera at Wooloolga saw a significant reduction in the number of detections of the in-service standard.

**Community response**

Communities at both Mt Ousley and Wooloolga reported significant reductions in noisy engine brakes as a result of those trials, although there is some evidence this may be a halo effect in the area surrounding the noise cameras. The community at Mt Ousley have also reported an increase in the number of noisy engine brakes following the completion of the trial education program.

The conclusion of the trials was that many truck operators responded to the education campaign and effectively reduced their vehicle's engine brake noise. However, a small but significant number of operators did not respond to the program and continued to impact the community with excessively noisy engine brakes. This result is consistent with other behavioural change programs, that is, enforcement measures are usually necessary where high levels of compliance are required to achieve the outcome sought.

**The issues that have either delayed or stopped the implementation of the regulations for the national standard for engine brake noise**

While the in-service standard included a model law for enforcement, the then available camera recording devices required significant development to be suitable for enforcement purposes. This caused a significant part of the delay in enforcement action. The Mt Ousley trial has assisted the development of an appropriate system.
Attachment A

NSW experience in enforcing the regulations for the national standard for engine brake noise

NSW has not introduced regulations to enforce the national standard. However, based on its experience in enforcing speed camera and smoky vehicle camera regulations, NSW does not envisage that enforcement of an engine brake noise regulation will be problematic.

The problems that have either delayed or stopped the enforcement of the regulations for the national standard for engine brake noise

See comment above.

Other information that might inform this review

RMS' review of the noise camera trials has identified a number of minor technical issues with the standard and its treatment of background-modulated root mean square level and background ambient noise. RMS understands that the NTC is aware of this issue. However, it would be pleased to provide further detail if required.

RMS is currently investigating the impact of surface reflection on compliance measurement. RMS will provide NTC the results of the investigation, which are expected to be available by late August.
Mr Nick Dimopolous  
Chief Executive and Commissioner  
National Transport Commission  
Level 15, 628 Bourke Street  
MELBOURNE VIC 3000

Dear Mr Dimopolous

REVIEW OF THE NATIONAL IN-SERVICE STANDARD FOR ENGINE BRAKE NOISE

I refer to your letter dated 22 June 2012, regarding a review of the national in-service standard for engine brake noise. As VicRoads has carriage of the implementation of this reform in Victoria, I am also responding on behalf of the Department of Transport.

Noise from engine brakes continues to be a major source of community complaint about heavy vehicles. The national in-service standard for engine brake noise was an attempt to address this issue, however, it was ineffective because legal issues associated with the enforcement of the standard remain unresolved. Consequently, VicRoads has been unable to implement the reform. Alternative measures implemented in Victoria to address engine brake noise have had limited success to date.

I am advised that members of our staff met on 9 July 2012 and the issues discussed are included in the attached submission.

I look forward to your review providing a practical way to address the ongoing issue of excessively noisy engine brakes.

If you require further information, Mr Don Hogben, Director - Vehicle Management and Safety (Tel: 9854 2901), would be pleased to assist.

Yours sincerely

GARY LIDDLE
CHIEF EXECUTIVE

9/18/2012

Attach.
REVIEW OF THE NATIONAL IN-SERVICE STANDARD FOR ENGINE BRAKE NOISE

VICROADS SUBMISSION

Current Problem of Engine Brake Noise in Victoria

In 2006, the National Transport Commission undertook surveys in a number of jurisdictions as part of the development of the in-service standard for engine brake noise. VicRoads participated in this work. However, it has not undertaken any surveys since then but anecdotally it would appear that the percentage of trucks with noisy engine brakes has not diminished.

VicRoads has, and continues to receive complaints from individuals and community action groups about the impact engine brakes have on residential amenity. These complaints are not only from residents in the Melbourne metropolitan area but also communities living on or near major freight routes in rural Victoria.

With the freight task increasingly becoming a 24/7 operation, it is anticipated that complaints regarding noisy engine brakes will increase rather than reduce, particularly in areas such as port precincts and freight hubs adjacent residential areas.

Managing engine brake noise in Victoria

VicRoads has introduced measures such as low noise road surfaces and noise barriers. While these measures have some impact on reducing overall traffic noise, they have had little impact on mitigating engine brake noise.

Over several years, a number of programs have been in place to specifically target noise from engine brakes. These include:

- The development of brochures, industry codes of practice and company policies;
- Advisory signs placed at key locations requesting truck drivers to avoid using engine brakes; and
- Truck curfews on some local roads.

These programs have had limited success in reducing the noise nuisance from engine brakes.

In February 2010, Victoria announced a two staged approach to managing heavy vehicle noise. Stage 1, involves on-road surveillance using basic ‘noise camera’ equipment and regulations to target truck noise. Stage 2, would involve the implementation of the national model legislation and deployment of noise camera technology to specifically target non-compliance with the national engine brake noise standard.

In March 2010, VicRoads commenced implementation of Stage 1, where a basic mobile noise camera is used to target noisy trucks around Victoria. The locations targeted are those identified by the community as ‘hot spots’ for heavy vehicle noise and are suitable for on-road surveillance.

Under Stage 1, the registered operator of a vehicle identified as excessively noisy is sent a notice requiring the operator to present the vehicle to an approved Environmental Protection Authority Victoria noise testing station. The vehicle is then required to be tested (using the National Stationary Exhaust Noise Test Procedure for In-service Motor Vehicles) and a report provided to VicRoads. Failure to comply with the requirement in the notice may result in the suspension of the truck’s registration.
A program of on-road surveillance under Stage 1 was completed in December 2010. Under the program 24 sites across Victoria (11 rural and 13 metropolitan) were targeted, with some of the more problematic sites targeted more than once.

As a result of the on-road surveillance, 81 notices were issued to operators of trucks identified as excessively noisy. The registrations of five vehicles were suspended for not complying with the notice.

As issues surrounding Stage 2 remain unresolved (see comments below), VicRoads recommenced a program of ‘stage 1’ surveillance in May 2012. The program will run for four months and the results from this program will not be available until late 2012.

VicRoads is currently exploring the feasibility of banning the use of engine brakes in urban areas except in emergency situations. Legal advice is being sought regarding VicRoads’ ability to issue an ‘on-the-spot’ fine rather than requiring the matter be taken to court. Initial legal advice indicates relying solely on ‘subjective’ evidence from an enforcement officer would not enable a fine to be issued. That is, the use of a sound meter or some other form of sound measuring equipment that clearly identifies that the vehicle is excessively noisy would be required to support the observation of an enforcement officer.

National standard for engine brake noise

VicRoads met with the Victorian Department of Justice (DOJ) in late 2009 to discuss the implementation of the model legislation and the available technology to enforce the legislation. The Department of Justice advised that it would not support the introduction of the necessary legislation as it was not satisfied that technology required to enforce the engine brake noise standard would meet the stringent standards of testing and sealing - in particular, a mechanism to ensure the security of the camera data when data is accessed remotely.

The DOJ also advised that it would not agree to an offence being enforced by an infringement notice if that offence is to be established (even in part) on the basis of subjective evidence from an officer. This means that unless the subjective element can be removed from the proposed means of dealing with engine brake noise, the offence would need to be dealt with by Court, rather than by infringement notice as is the intent of the model legislation. Therefore, an officer would always need to attend Court to give evidence of what was seen on the video. The DOJ expressed concern as to whether the expense of administering such a court-based offence could be justified.

Discussions at officer level with both New South Wales and South Australia regarding the trialling of noise camera systems in their respective States would indicate that the issues raised by the DOJ regarding the technology remain unresolved in their jurisdictions too.

Other issues

The mobile noise camera system being deployed across Victoria is not suitable for all sites because it requires a person to deploy and monitor the equipment. Therefore, the noise camera system is only deployed at sites that are safe for an operator.

To address this issue, VicRoads has engaged a contractor to develop a static noise camera system that can be monitored remotely. In developing the static noise camera system, the contractor has highlighted an issue with the algorithm developed by the NTC. The algorithm results in a large number of false positives (other vehicles or objects triggering the camera) requiring footage to be reviewed to ensure that a breach has occurred. The false positives are
of concern to the DOJ and remain a stumbling block for the automatic issuing of an infringement notice.

The complexity of the RMS modulation algorithm proposed by the NTC poses several challenges, in particular:

- It is not clear how a system that determines the RMS modulation of a noise signal can be calibrated or verified;
- It is difficult for the operator/driver of a truck to know whether the engine brake noise produced exceeds the RMS modulation; and
- It is difficult for a Magistrate to understand the nature of the algorithm, and hence understand how to deal with offences.

As there is no Australian Design Rule requirement for new trucks to comply with the RMS modulation limit, it may be considered unreasonable to expect the operator to maintain a vehicle to comply with the national noise standard.

The national standard developed is also only suitable for use at low noise sites (50 dB(A) background noise level with 0.5 RMS modulation). The majority of the sites identified as ‘hot spots’ for engine brake noise in Victoria are well above this level.
Dear Mr Dimopoulos,

**RE: Review of the National In-Service Standard for Engine Brake Noise**

The Department of Planning, Transport and Infrastructure (DPTI) welcomes the NTC’s review of the National In-service Standard for Engine Brake Noise.

Noise from heavy vehicle engine brakes is a significant issue in South Australia, leading to frequent complaints from members of the community to the department and to the minister.

DPTI takes all reasonable steps to mitigate engine brake noise, along with general traffic noise, in the design and upgrade of roads. Along established roads, where engine brake noise is a significant issue, drivers are reminded to use service brakes wherever practicable.

A Ministerial Specification for new dwellings near established roads has been developed to specify and require appropriate noise attenuation measures to be incorporated.

My department provides information for owners of established houses on methods to reduce the impacts of general transport-related noise.

DPTI has investigated the potential to establish and enforce the National In-Service Standard for Engine Brake Noise in South Australia. My department has operated noise cameras at strategic locations over the past few years to objectively measure the extent of the issue and the opportunity that enforcing the national standard may offer.
There has not been a thorough statistical analysis of the data we have obtained using our noise cameras. I can advise, however, that we found that less than one in every thousand heavy vehicle pass-bys resulted in a detection of an engine brake noise event that exceeded the levels set in the national standard.

DPTI has not pursued implementation of the national standard at this stage, because:

- Breaches of the standard at a given location would occur rarely, even on our busiest freight routes (that is, the community is unlikely to perceive any benefit);
- It is understood that other jurisdictions, using the same detection and camera technology, have been unable to achieve an appropriate evidentiary standard for prosecution of engine brake noise offenders; and
- There remain concerns about dissuading drivers to use brakes, to avoid noise detection, where avoidance of braking presents a safety risk.

I am advised that Mr Paul Davies, Manager Environment Policy, DPTI, met with Messrs Brook Hall and Neil Wong of the NTC on this matter on 17 July. Paul is the appropriate person in my department to contact for further information on engine brake noise policy (details at the top of this letter).

I note that the NTC's review will be completed this calendar year, and look forward to your subsequent advice on the matter to the Standing Council on Transport and Infrastructure.

Yours sincerely,

Rod Hook
CHIEF EXECUTIVE

September 2012
Dear Mr Martin,

Thank you for your letter about the review of the national in-service standard for engine brake noise. The Department of Transport and Main Roads (TMR) received a request for information from the National Transport Commission (NTC) regarding this issue and I have directed TMR to prepare a submission to assist the NTC with the review.

TMR receives regular complaints from the public about engine brake noise and understands that noise influences people's health and well-being. TMR is currently collating information regarding the impact of this noise and historical approaches the state has taken to deal with the problem.

I look forward to working with the NTC and all other jurisdictions of Australia to resolve a difficult problem. I am confident the contribution of relevant historical information and data as well as fresh input will lead to a timely resolution and the adoption of a workable, nationally consistent approach to this issue.

If you require further information please call, Mr Peter Caprioli, Director, Freight and Vehicle Systems Strategy on 32534456. Mr Caprioli will be happy to assist.

Yours sincerely,

Scott Emerson MP
Minister for Transport and Main Roads
ATTACHMENT 1

Review of the In-Service Engine Brake Noise Standard – Queensland Department of Transport and Main Roads input to National Transport Commission survey

the size of the current problem of engine brake noise in your state or territory. Please include any survey data or other metrics you use to describe this noise problem;

Queensland has limited data on the issue and has not conducted trials or public surveys on the impact of engine brake noise on Queenslanders. Given the short timeframes, the department has undertaken desktop analyses of communications between public and TMR about engine brake noise.

The analyses looked at correspondence and queries on record for the past ten years. The research specifically examined the date, location and central issue identified by the public. The key words searched were; air brakes, engine brakes, exhaust brakes, compression brakes, Jake brakes, Jacob brakes and noisy trucks.

![Engine Brake Noise Complaints](image)

Figure 1: Engine Brake Noise Complaints (2012 represents year to date at July 2012)

The results of the analysis demonstrates a marked increase over the last ten years, from four complaints in 2003 to 21 complaints in 2011 with the highest number, 25 complaints, being received in 2008. There have been nine complaints received in 2012 to date. These numbers represent a six-fold increase against a backdrop of an estimated average of 4% annual increase in road freight in Queensland.

General Results

There is a total of 122 communications on record for the years 2003 to 2012. There have been 90 ministerial correspondences, 18 web enquiries and two member of parliament enquiries in that time. There have also been 10 separate caucus enquiries since 2009.

The most frequent concern raised by residents (n=24) was a request for a sign to limit engine brake noise. The correspondence also indicated that there is an incorrect public perception that these signs are enforceable and that heavy vehicle drivers can be penalised for using engine brakes in urban or residential areas.
The department's policy is not to place engine brake restriction signs in areas where the speed limit is greater than 80km per hour for safety reasons. This has led to subsequent requests to lower speed limits to below 60km per hour to facilitate the placement of signs. There were also letters complaining that signs were being ignored.

**Origin of complaint**
The desktop analyses indicated that the majority of complaints originated from in or around urban Brisbane with most of the disturbances, noted by the public, in areas where trucks were required to slow on descents or to enter intersections and roundabouts. There were also a significant number of complaints from regional Queensland including Toowoomba, Mackay, Townsville, Port Douglas and North and South Coastal areas particularly as trucks are required to reduce speed to enter built up areas.

**Night Noise and Tolls**
The issue of night noise seems to be of particular concern to residents with many complaints referring to sleep disturbance. Queensland trialled a night time toll free period for heavy vehicles on the Gateway Bridge as a congestion reduction strategy in 2007. The department received a significant number of complaints around the increase in engine brake noise at night as heavy vehicles slowed to pay tolls. The toll free incentive was discontinued and the introduction of no stop electronic tolling in 2009 should have reduced engine brake noise around toll sites. However, with the rate of congestion and the freight task both expected to increase substantially, night road freight and associated noise will increase in the future and strategies to address this should be put in place now.

**Your state or territory's approach to managing engine brake noise;**
Queensland is yet to enact legislation as the Department of Transport and Main Roads (TMR) has been awaiting the results of trials involving the field testing of noise equipment, the development of procedures for their operation, and verification of the monitoring equipment's accuracy. TMR expected to benefit from the results of the work conducted in New South Wales and Victoria reducing duplication of effort and expenditure. It was anticipated the results of these trials would form the basis of a compliance framework for legislative purposes, with the drafting of amendments to follow.

The delays in implementing an engine brake noise standard reflect the lack of agreement on how to best enforce the standard and limited confidence in the technologies currently available. However, it should be noted that Queensland has been informing the public that we are awaiting the introduction of the new standards as soon as appropriate technology and a regulatory framework is achieved. Additional interim and complementary approaches are detailed below.

**Inspection regime**
TMR operates a compulsory annual inspection regime. The standard of mufflers on the vehicle is checked at this inspection, and any vehicle with a faulty muffler is issued with a defect notice to have it repaired or replaced. Heavy vehicles are inspected every twelve months and public passanger vehicles, such as buses, are inspected every six months. TMR currently inspects approximately 61,000 vehicles annually, while private inspection stations inspect approximately 49,000 vehicles each year. This allows defective mechanical performance, which contributes to increased exhaust emissions, to be identified and rectified. Inspections identify and rectify mechanical defects that contribute to increased engine brake noises.
Signs and education
In 2004, TMR developed guidelines for the use of signs to reduce heavy vehicle noise, as an interim measure to reduce engine brake noise (see Attachment A). TMR has placed signs on all the major truck routes into the Brisbane area. There are 20 signs that request limiting compression braking and five signs that request the reduction of noise in urban areas (see Attachment B). However, this approach is not considered effective as the overuse of signs was found to detract from their impact particularly without enforcement provisions.

With the support of the trucking industry through the Road Freight Industry Council, the department jointly developed an educational and awareness strategy to support the use of limit compression braking signs in Queensland in 2004. This included a brochure, to discourage the use of truck engine brakes in and near urban areas (see Attachment C).

Industry has pointed out that inappropriate use of engine brakes can be attributed to the behaviour of a small number of drivers and is not representative of the majority of responsible heavy vehicle drivers. However, the increase in complaints from residents indicates that Queensland has had limited success with signs and educational approaches.

Restricted Access
Queensland restricted heavy vehicle access to the Brisbane Urban Corridor (BUC) as a through-route in April 2007, as an explicit election promise primarily to improve congestion and road safety. However, the BUC restriction was later considered to be part of the overall strategy to reduce the use of engine brakes in urban areas and was included in some standard responses to heavy vehicle noise complaints. It was monitored through the introduction of Automatic Number Plate Recognition. Preliminary investigations indicate a relocation of noise impacts to surrounding areas rather than a solution to the problem of engine brake noise in urban areas. However, more analysis would be required to confirm this.

Noise Barriers and attenuation strategies
Noise and vibration specialists within the department advise that noise barriers are not particularly effective for isolated noise events such as engine braking. Furthermore, it is difficult, to provide noise attenuation treatments that are technically feasible, aesthetically pleasing and cost effective.

your experience in implementing the regulation for the national standard for engine brake noise;

Queensland has not implemented regulations for the national standard for engine brake noise.

the issues that have delayed the implementation of the engine brake noise standard;

As stated before Queensland has been awaiting results of trials conducted in NSW and Victoria. The lack of an agreed effective technology that will enable enforcement of the standard remains the main obstacle that has delayed the implementation of the national standard in Queensland. Queensland is reluctant to act unilaterally on an issue that impacts an industry that regularly moves between jurisdictions and has consistently requested simplified national laws and less regulatory burden.
your experience in enforcing the regulations for the national standard for engine brake noise;

Queensland has no experience in implementing the regulations for the national standard for engine brake noise.

your experience in the enforcement of the regulations for the national standards for engine brake noise;

Queensland has no experience with the enforcement of the regulations of the national standards for engine brake noise.

the problems that have either delayed or stopped the enforcement of the regulations for the national standard for engine brake noise;

Queensland can not comment as we do not have regulations to enforce at this time.

8) Additional comments

TMR sees opportunities in linking access to routes through urban and residential areas to heavy vehicles that perform better in terms of both air and noise emissions. This will add incentives for operators to invest in newer more fuel efficient, quieter and less polluting vehicles and improve amenity for residents.
Department of Infrastructure, Energy and Resources
LAND TRANSPORT SAFETY DIVISION

Enquiries Danny Johnson
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Your Ref AG-11C-0032-01 Our Ref 201274542

Mr Nick Dimopoulos
Chief Executive and Commissioner
National Transport Commission
Level 15/628 Bourke Street
Melbourne VIC 3000

Dear Mr Dimopoulos

Review of the National In-Services Standard for Engine Brake Noise

I refer to your letter dated 22 June 2012 to Mr Norm Molfatrick, Secretary of the Department of Infrastructure, Energy and Resources (DIER) advising of the National Transport Commission’s review into the in-service standard for engine brake noise.

Thank you for the opportunity to detail the problem of engine brake noise in Tasmania and DIER’s response to this issue.

- The size of the current engine noise problem is generally considered small but can be sporadic. DIER measures excessive engine noise by the number of public complaints received, which is, on average, around two complaints a month. DIER does not maintain other metrics that describe this problem;

- DIER’s current approach to managing engine brake noise is to install advisory signs at ‘hot spots’ that are designed to encourage heavy vehicle operators to respect the residential environment by avoiding the use of engine brakes. Where evidence of non-compliance with an advisory sign is received, DIER Transport Inspectors contact the operator of the offending heavy vehicle, explain the problem, and request that they advise their driver not to use engine brakes in residential areas where they are not required for safety reasons. This approach has proved to be a very effective way of reducing truck noise at problem locations. DIER also works collaboratively with the heavy vehicle industry to put in place strategies aimed at addressing noise impacts. This has included educating drivers to restrain from using engine brakes in residential areas where the use of those brakes is not required for safety reasons, reducing where practical the number of truck movements at night, and checking heavy vehicles to identify any that might be non-compliant with vehicle standards.

- Tasmania has not implemented regulations for the national standard for engine brake noise. The immediate focus has been directed toward driver education. In the longer term, it is expected Tasmania will be part of a national approach to this problem coordinated by the National Heavy Vehicle Regulator.

If you have any further questions in relation to this matter, please contact Mr Danny Johnson, Manager, Vehicle Operations Branch on 03 6233 5395 or via email at danny.johnson@dtas.tas.gov.au.

Yours sincerely

Craig Hody
Acting General Manager, Land Transport Safety
July 2012
Mr Nick Dimopoulos  
Chief Executive and Commissioner  
National Transport Commission  
Level 15 / 628 Bourke Street  
MELBOURNE VIC 3000

Dear Nick

Review of the National In-Service Standard for Engine Brake Noise

Thank you for your letter of 22 June 2012, regarding the NTC's review of the in-service standard for engine brake noise.

Enforcement of the proposed standard relies on the use of a noise camera to detect and record excessively noisy engine brakes. In light of unresolved technical problems experienced by other jurisdictions in the use of the noise camera, Western Australia has not implemented the proposed standard or the associated regulations. This position will be reviewed when the technical problems are resolved.

Our responses to the specific questions in your letter are as follows:

• The size of the current problem of engine brake noise in WA;

WA's engine noise problems are generally confined to a small number of local districts in the Perth metropolitan area. Most heavy vehicle noise complaints emanate from residents in the eastern suburbs in close proximity to the steep hills leading in and out of Perth, where operators are more likely to use engine brakes while descending. Other than steep descents in the eastern suburbs, engine brake noise is the main cause of noise complaints on other roads where drivers use these systems to reduce speed.

• WA's current approach to managing engine brake noise;

The community has an expectation of being able to obtain goods and services and every effort is made to ensure heavy vehicle traffic is appropriately managed. Where possible in some areas of Perth, signage has been erected or detours introduced.
As part of on-road compliance, Main Roads' officers regularly inspect commercial vehicles for roadworthiness and this can include exhaust systems. While the inspectors do not have the equipment to measure noise emissions at the roadside they will place a defect notice on any vehicle which, from their assessment, does not conform to the requirements of the legislation in terms of exhaust systems. The placement of such a notice requires the vehicle to be presented for further examination at a Vehicle Examination Centre or Approved Inspection Station. The WA Police are also able to issue vehicle defect notices for such breaches.

From time to time Main Roads receives reports from the public regarding noisy trucks. Where specific operators can be identified as causing excessive noise, Main Roads raises the matter with them in an effort to alleviate the situation.

- **WA's experience in implementing the regulations for the national standard for engine brake noise;**

As mentioned above, WA has not implemented the regulations.

- **the issues that have either delayed or stopped the implementation of the regulations for the national standard for engine brake noise;**

WA is aware of the technical problems that have been experienced by other jurisdictions in the use of the prescribed noise camera to detect breaches of the standard.

- **WA's experience in enforcing the regulations for the national standard for engine brake noise;**

As mentioned above, WA has not implemented the regulations.

- **the problems that have either delayed or stopped the enforcement of the regulations for the national standard for engine brake noise;**

Technical issues as mentioned above.

Thank you once again for the opportunity to provide input into the review. If you require any further information, please contact Mr John Marcolina, Manager Vehicle Safety and Standards on (08) 9216 3888.

Yours sincerely

[Nina Lyhne]

Managing Director

24/8/2012
Review of the National In-Service Standard for Engine Brake Noise

Mr Brook Hall
Senior Policy Analyst
National Transport Commission
Level 15/ 628 Bourke Street
MELBOURNE VIC 3000

Dear Mr Hall

Ref: Review of the National In-Service Standard for Engine Brake Noise

I write in relation to the letter of 22 June 2012 from Mr Nick Dimopoulos about the review of the National In-Service Standard for Engine Brake Noise.

The ACT supported the National In-Service Standard for Engine Brake Noise in 2007 during the formal Australian Transport Council (ATC) voting process.

Late in 2011 the 5th and 6th amendment packages of the Australian Vehicle Standards Rules (AVSRs) 5th and 6th were adopted into ACT road transport law. Those amendment packages included the National Stationary Exhaust Noise Test Procedures for In-service Motor Vehicles and the Stationary Noise Limits required by Australian Design Rule 83/90.

However, the agreed National In-Service Standard for Engine Brake Noise was not adopted into ACT road transport law at this time. It is understood that the model law is still to be consolidated into the national model laws, and it is also understood that States and the Northern Territory are also still to adopt the engine brake noise standard into local laws.

The ACT does not appear to have the same issue with engine brake noise that some jurisdictions suffer. Most arterial roads within the ACT are separated from residential areas and do not have residences fronting them, although there are a number of lengths of the arterial road network that are also part of the B-Double and similar vehicle networks that have significant gradients and are relatively close to residential development.

As such the ACT has installed a number of advisory signs in these areas requesting heavy vehicle drivers limit engine brake noise. Similarly, signs have also been placed along noise sensitive routes that have heavy vehicle traffic. The guidelines used to
determine whether a compression brake advisory sign should be erected are the same as those used in NSW.

Investigation of exhaust brake noise complaints in the ACT has identified that most are associated with short term building and construction affecting local areas. Complaint handling has included approaching transport and construction site staff to encourage limitation of exhaust brake and other vehicle noise including possible alternative delivery route and times to mitigate impacts on residents.

While the ACT has supported the development of the standard, and would be supportive of the review within the resource limitations of the Territory, the ACT has not, and is unlikely to be in a position to acquire noise camera equipment required to monitor and enforce engine brake noise standards.

Should you require any further information in relation to this matter, please contact Peter Hunter, Manager Vehicle Safety on telephone (02) 620 53597 or at peter.hunter@act.gov.au via email.

I am grateful for the NTC’s ongoing interest in this matter.

Yours sincerely

Stephen Goggs
Deputy Director General
Community Safety

10 August 2012
Mr Nick Dimopoulos
Chief Executive and Commissioner
National Transport Commission
Level 16/828 Bourke St
MELBOURNE VIC 3000

Dear Mr Dimopoulos

Thank you for your letter of 22 June 2012 requesting information from this agency for consideration in the review of the National In-Service Standard for Engine Brake Noise.

As you may know, the Northern Territory Government has not yet implemented legislation to establish the National In-Service Standard for Engine Brake Noise. Vehicle engine brake noise has not been a significant issue for Territorians, for reasons that include the nature of the terrain, population density and location of arterial highways in comparison to residential areas.

Historically, complaints relating to noise-pollution from heavy vehicle engine brakes in the Northern Territory have been very few in nature. Any such complaints have been dealt with on a case by case basis, in a non-regulatory manner. For example in one particular area where engine brake noise was reported to be a problem, advisory signage was introduced to resolve the issue. This example remains, however, the only major issue relating to engine brake noise in the Northern Territory reported during the past five years.

The Territory is gearing up for increasing industrial growth over the next few years and a resultant increase in heavy vehicle traffic. This agency will continue to monitor the situation and would appreciate being kept informed about the review, with the future possibility of implementing the regulatory standard if any such action is deemed necessary.

Yours sincerely,

PAUL RAJAN
Executive Director
August 2012
APPENDIX B: CURRENT MODEL LAWS IN RELATION TO ENGINE BRAKE NOISE LIMITS

A. PROPOSED AMENDMENT TO THE AUSTRALIAN VEHICLE STANDARDS RULES

After rule 153 of the Australian Vehicle Standards Rules insert:

“153A Limits on engine brake noise

(1) In this rule:

approved engine brake noise measuring and recording device means a device that measures and records the engine brake noise emitted by a vehicle and that is of a type that has been approved by the [relevant jurisdictional authority] as suitable for the enforcement of engine brake noise limits;

modulated RMS means the figure that results from applying the method set out in National In-Service Engine Brake Noise Test Procedures for Heavy Vehicles published on xx xxxx 2007 by the National Transport Commission, as amended from time to time, to a heavy vehicle's engine brake noise as measured and recorded by an approved engine brake noise measuring and recording device in accordance with the procedures set out in that document.

(2) An engine brake device fitted to a motor vehicle must not emit noise that has a modulated RMS of more than 3.0.

(3) For the purposes of sub-rule (2), an engine brake device includes any exhaust outlets of the device, and anything attached to such outlets, including mufflers.”.

B. PROPOSED AMENDMENT TO THE VEHICLE STANDARDS REGULATIONS

After regulation 14 of the Road Transport Reform (Vehicle Standards) Regulations insert:

“14A. Engine brake devices not complying with Vehicle Standards

If an engine brake device contravenes rule 153A of the Vehicle Standards, the operator of the vehicle to which the device is fitted commits an offence.

Penalty: [local variations].”.

[Implementation note: As these provisions are novel, it is intended that the amendments will only be introduced after the intention to introduce them has been well-publicised. It is also intended that first offenders will be dealt with by way of a warning that includes information as to how a repetition of the offence can be prevented.]

C. PROVISIONS THAT IT WOULD BE DESIRABLE TO INCLUDE TO ASSIST IN THE ENFORCEMENT OF ENGINE BRAKE NOISE LIMITS

[Drafting note: In most, if not all, jurisdictions, these provisions will need to be enacted as primary legislation.]

x. Evidence of engine brake noise

A document that has been produced by either an approved engine brake noise measuring and recording device or an approved camera recording device and that shows one or more images of a vehicle together with details purporting to be a
modulated RMS and the date, time and place at which the modulated RMS was measured and recorded –

(a) is admissible in any proceedings; and

(b) is evidence that the engine brake noise emitted from the engine brake device fitted to that vehicle had that modulated RMS at that date, time and place.

y. **Evidence of engine brake noise**

A statement in a certificate purporting to have been issued by [relevant jurisdictional authorities/officers] that, at a specified time or during a specified period –

(a) a specified device is, or was, an approved engine brake noise measuring and recording device or an approved camera recording device;

(b) a specified approved engine brake noise measuring and recording device or approved camera recording device was tested or sealed in a specified way;

(c) a specified approved engine brake noise measuring and recording device or an approved camera recording device was operated in a specified way;

(d) a specified modulated RMS relates to a specified vehicle –

is admissible in any proceedings and is evidence of the matters stated.”.

[Drafting note: These provisions will need to be supported by definitions of “approved engine brake noise measuring and recording device”, “modulated RMS” and the following:

**approved camera recording device means a device** approved by [relevant jurisdictional authority] as suitable for the enforcement of engine brake noise limits that is designed to be attached to an approved engine brake noise measuring and recording device for the purpose of producing, in respect of any vehicle that has any noise that it emits measured and recorded by that device, a document containing one or more images of the vehicle together with details of –

(a) the modulated RMS of that noise as recorded by that device; and

(b) the date, time and place the measurement was taken and recorded;

**engine brake device** includes any exhaust outlets of the device, and anything attached to such outlets, including mufflers.
APPENDIX C: RELEVANT VICTORIAN PROVISIONS FOR THE USE OF SPEED CAMERAS

ROAD SAFETY ACT 1986

79. EVIDENCE OF SPEED

(1) If in any criminal proceedings the speed at which a motor vehicle or trailer travelled on any occasion is relevant, evidence of the speed of the motor vehicle or trailer as indicated or determined on that occasion by a prescribed road safety camera or prescribed speed detector when tested, sealed and used in the prescribed manner is, without prejudice to any other mode of proof and in the absence of evidence to the contrary, proof of the speed of the motor vehicle or trailer on that occasion.

(2) For the purpose of any criminal proceedings in which the speed at which a motor vehicle or trailer travelled on any occasion is relevant, if a trailer or a motor vehicle that is being towed is attached to a motor vehicle, the trailer or towed motor vehicle and the towing motor vehicle are to be taken to be travelling at the same speed.

80. CERTAIN MATTERS INDICATED BY PRESCRIBED ROAD SAFETY CAMERAS ARE EVIDENCE

(1) If in proceedings for an offence to which section 66 applies the fact that the driver of the motor vehicle or trailer disobeyed a traffic signal or drove the motor vehicle or trailer in a particular portion of a highway on any occasion is relevant, evidence of that fact as indicated or determined on that occasion by-

(a) a prescribed road safety camera; or

(b) an image or message produced by a prescribed road safety camera or by a prescribed process- when used in the prescribed manner is, without prejudice to any other mode of proof and in the absence of evidence to the contrary, proof of the fact that the driver of the motor vehicle or trailer disobeyed a traffic signal or drove the motor vehicle or trailer in that portion of the highway on that occasion.

(2) For the purpose of any proceedings for an offence to which section 66 applies in which the question whether the driver of a motor vehicle or trailer disobeyed a traffic signal or drove the motor vehicle or trailer in a particular portion of a highway on any occasion is relevant, if a trailer or a motor vehicle that is being towed is attached to a motor vehicle, proof that the driver of one of those vehicles disobeyed a traffic signal or drove the vehicle in a particular portion of the highway on that occasion is proof that the driver of the other vehicle did so.

83. EVIDENCE OF TESTING AND SEALING

A certificate in the prescribed form to the effect that any prescribed speed detector or device referred to in section 79 or 82 has been tested or sealed in the prescribed manner, signed or purporting to be signed by a person authorised to do so by the regulations is, without prejudice to any other mode of proof and in the absence of evidence to the contrary, proof that the prescribed speed detector or device has been so tested or sealed.

83A. EVIDENCE RELATING TO PRESCRIBED ROAD SAFETY CAMERAS

(1) A certificate containing the prescribed information purporting to be issued by an authorised person certifying-

(a) that a prescribed road safety camera was tested, sealed or used in the prescribed manner; or

(b) that an image or message described in the certificate was produced by a prescribed road safety camera or by a prescribed process; or
(c) as to any other matter that appears in, or that can be determined from, the records kept in relation to the prescribed road safety camera or the prescribed process by the police force of Victoria-

(1) is admissible in evidence in any proceedings and, in the absence of evidence to the contrary, is proof of the matters stated in the certificate.

(2) In this section authorised person means a person authorised for the purposes of this section by the Chief Commissioner of Police.

ROAD SAFETY (GENERAL) REGULATIONS 2009

32. TESTING OF MOBILE ANALOGUE ROAD SAFETY CAMERAS

For the purposes of sections 81 and 84(7) of the Act, a mobile analogue RSC is tested in the prescribed manner if the testing officer who tests the system-

(a) is satisfied that the system is in a satisfactory electrical condition and, in particular, that any maintenance carried out on the system has been carried out in a satisfactory manner; and

(b) is satisfied that the speed calculation unit is properly calibrated so that it indicates speed readings within a limit of error not greater than or less than 3 kilometres per hour or 3 per cent (whichever is greater) of the true speeds.

33. SEALING OF MOBILE ANALOGUE ROAD SAFETY CAMERAS

A mobile analogue RSC is sealed in the prescribed manner for the purposes of sections 81 and 84(7) of the Act if the speed calculation unit is sealed-

(a) by the testing officer who carried out the test under regulation 32; and

(b) with a seal that effectively prevents interference with the time measuring or speed computing components of the speed calculation unit without breaking the seal.

34. USE OF MOBILE ANALOGUE ROAD SAFETY CAMERAS

For the purposes of sections 80, 80A, 81, 84(7) and 84H(2)(a) of the Act, a mobile analogue RSC is used in the prescribed manner if-

(a) the system is used in accordance with operating instructions approved by a testing officer; and

(b) the speed calculation unit has been tested in accordance with regulation 32 within 12 months before the occasion of its use; and

(c) the speed calculation unit has been sealed in accordance with regulation 33 at the time that it was last tested.

38. TESTING OF MOBILE DIGITAL ROAD SAFETY CAMERAS

For the purposes of sections 81 and 84(7) of the Act, a mobile digital RSC is tested in the prescribed manner if the testing officer who tests the system-

(a) is satisfied that the system is in a satisfactory electrical condition and, in particular, that any maintenance carried out on the system has been carried out in a satisfactory manner; and

(b) is satisfied that the speed calculation unit is properly calibrated so that the frequencies or speeds at which calibration is effected indicate speed readings within a limit of error not greater than or less than 3 kilometres per hour or 3 per cent (whichever is greater) of the true speeds determinable from those frequencies or speeds.
39. SEALING OF MOBILE DIGITAL ROAD SAFETY CAMERAS

A mobile digital RSC is sealed in the prescribed manner for the purposes of sections 81 and 84(7) of the Act if the speed calculation unit is sealed-

(a) by the testing officer who carried out the test under regulation 38; and

(b) with a seal that effectively prevents interference with the time measuring or speed computing components of the speed calculation unit without breaking the seal.

40. USE OF MOBILE DIGITAL ROAD SAFETY CAMERAS

For the purposes of sections 80, 80A, 81, 83(1), 84(7) and 84H(2)(a) of the Act, a mobile digital RSC is used in the prescribed manner if-

(a) the speed calculation unit is used in accordance with operating instructions approved by a testing officer; and

(b) the speed calculation unit has been tested in accordance with regulation 38 within 12 months before the occasion of its use; and

(c) the speed calculation unit has been sealed in accordance with regulation 39 at the time that it was last tested.

52. CERTIFICATE AS TO TESTING AND SEALING ROAD SAFETY CAMERA OR SPEED DETECTOR

(1) For the purposes of section 83 of the Act, a certificate in relation to the testing and sealing of a road safety camera or a speed detector is in the prescribed form if it is in the form set out in Schedule 3.

(2) A testing officer is authorised to sign a certificate referred to in subregulation (1).

Schedule 3

The *road safety camera/*speed detector/*portable weighing device/ (No. ) was tested in accordance with the Road Safety (General) Regulations 2009 on [date]. The test confirmed that the device was operating correctly in accordance with the requirements of those Regulations. The device has been properly sealed in accordance with those Regulations.

Date: Signature of person issuing certificate:

Name: [print name]

* Strike out whichever is not applicable.