Regulatory Advice – Managing the risks associated with heavy vehicles travelling down steep descents

NATIONAL HEAVY VEHICLE REGULATOR

Note: This information is intended as general guidance only and does not constitute legal advice. We encourage you to obtain independent advice about your legal obligations. If you have any feedback on the information provided, please contact us at info@nhvr.gov.au

This regulatory advice provides guidance on managing the risks associated with heavy vehicles travelling down steep descents, especially steep descents which requires the use of low gear.

Who is this advice for?

This regulatory advice is intended for:

- Parties in the Chain of Responsibility (CoR) and their executives.

This advice is applicable to all heavy vehicles with a GVM over 4.5 tonnes including buses ↓ as per the Heavy Vehicle National Law (HVNL).

Motorhomes and larges utes with a GVM over 4.5t are also heavy vehicles.

Note: The HVNL does not apply to buses with a GVM of 4.5t or lower however drivers of these vehicles must still comply with the Australian Road Rule 108 and the information contained in this advice is useful for operators in managing the risks involved with travelling down steep descents and reducing the risk of crashes.

What are my legal obligations?

Parties in the Chain of Responsibility

Under the HVNL section 26C, each party in the CoR and their executives has a **primary duty: to ensure the safety of transport activities, so far as is *reasonably practicable***.

This is an obligation to eliminate or minimise public risks, and a prohibition against directly or indirectly causing or encouraging a driver or another person, including a party in the CoR, to contravene the HVNL or to exceed a speed limit.

CoR parties should be aware that they remain a CoR party even when their transport activities are contracted, or subcontracted, to another party.

Under the HVNL section 26D, executives of a businesses that are a party in the CoR have a distinct **duty: to exercise *due diligence* to ensure the business complies with its primary duty** .

Note: Transport activities ↓ includes all activities and business processes associated with the use of a

heavy vehicle on a road.

What are the legal consequences?

If your business is a party in the CoR and it fails to eliminate or minimise public risks so far as is reasonably practicable, then it may be in breach of its primary duty. If a breach is proven, the law provides sanctions against a company and its executives, ranging from education and improvement notices to prosecution.

Why is this important to my business?

When planning a journey for your transport activities you must consider potential safety risks associated with the route. Failing to do so is a breach of your primary duty obligations.

Steep descents can present a significant safety risk, particularly for heavy vehicles carrying a load or that are not properly maintained. You should consider the skill and experience of the driver and ensure they are sufficiently informed about the risks and have the appropriate training to safely undertake the descent.

Incidents involving heavy vehicles failing to safely undertake a steep descent have resulted in serious injury and death. There have also been several near misses where heavy vehicles have had to use safety ramps/arrester beds to avoid an incident.

It is important that CoR parties understand the risks associated with steep descents and proactively manage the safety of vehicles and drivers. Taking proactive steps to manage safety risks and meeting your legal obligations also helps protect your business from possible regulatory action.

What are the hazards and risks?

Hazards associated with steep descents, especially descents that require the use of low gear, may include:

- the steep descent amplifying other hazards, which are of greater consequence than if travelling on a flat stretch of road
- inadequately experienced or undertrained drivers not understanding the vehicle's capabilities (auto transmission vs manual gearbox, auxiliary brake operation, etc.)
- unfamiliarity with the road terrain
- poorly maintained heavy vehicles
- travelling at an inappropriate speed
- driver fatigue impacting decision making
- complacency
- poor weather conditions or low visibility.

The potential safety risks resulting from these hazards may include:

- serious injury or fatalities to heavy vehicle drivers, other road users and the public
- damage to road and other infrastructure
- environmental damage due to spills
- increased risk of trauma to first responders in the event of a crash.

Why is it important to manage the hazards and risks?

By appropriately managing these hazards and safety risks, CoR parties can:

- prevent serious injury and fatalities to heavy vehicle drivers, other road users and the public
- prevent damage to infrastructure
- create a safety culture within their business where heavy vehicle drivers are encouraged to make informed decisions about safety

- enhance their business's reputation and position it as a business or employer of choice.

How do I manage the hazards and risks?

One of the most effective ways for CoR parties in the heavy vehicle supply chain to manage the safety of their transport activities is to adopt and actively use a Safety Management System (SMS) as part of their everyday business.

An SMS is a systematic approach to managing safety which, once implemented, will help CoR parties identify how to ensure the safety of their transport activities, so far as is *reasonably practicable*.

As part of the risk management process, CoR parties should:

- identify hazards associated with their transport activities
- assess the risks associated with those hazards
- identify and implement control measures to eliminate or minimise those risks
- review the effectiveness of control measures, periodically and/or post any incident, to ensure they remain effective.

CoR parties, such as operators and employers, may consider specific control measures such as:

Route planning and fatigue management

- Implement policies and procedures regarding journey planning, such as the development of safe driving plans.
- Identify the location of safety risks including steep descents prior to a journey, either by active enquiries or surveying the route to check for steep descents, noting particular features and locations of safety ramps/arrester beds
- Use appropriate safety technologies to:
  - identify steep descents and have these marked to display a warning message
  - monitor vehicle speed/location during the journey.
- Check with drivers prior to commencing a journey that the driver is aware of the steep descent on the route, the closest safe stopping location prior to the descent and identification/location of safety ramps/arrester beds if required
- Implement policies and procedures regarding fatigue and journey planning

More information on fatigue can be found at Regulatory Advice – Fitness to drive: Fatigue.

Safe Driving Plans

Safe driving plans identify hazards on the route that may affect vehicle stability (e.g., harsh corners and steep descents) and advises drivers of precautions to be taken. A safe driving plan may also be called a trip or journey plan. The plan should include sufficient time for the journey to be completed safely and according to speed limits, allowing for contingencies and changes of conditions. These plans should be developed and/or reviewed with knowledgeable drivers.

Driver induction and training

CoR parties, namely operators, employers, and prime contractors, need to ensure they adequately train and prepare their drivers with the necessary skills to undertake tasks safely. Training must be relevant to the task and aimed at improving skills and safety.

Examples include:

- ensuring drivers are properly trained to maintain vehicle control when negotiating a descent
- delivering toolbox talks relating to hazards on routes, using low gears and auxiliary brakes to manage speed, and discussing contingency plans and procedures for the management of runaway trucks such as the use of safety ramps/arrester beds
- undertaking regular training and competency checks of drivers who operate on steep descents

- providing education to drivers in relation to the challenges involved in steep descents
- alerting drivers to location of steep descents on the routes through safe driving plans, briefs, or electronic means (GPS alerts)
- familiarising drivers with early indicators of brake deterioration or failure

More information on managing the risks associated with undertrained workers can be found at Regulatory Advice - Managing the risks of undertrained workers.

Foster a safety culture

- Ensure the vehicle is appropriately maintained with particular attention to brakes, auxiliary brakes, tyres, steering and suspension
- Empower drivers to make safety decisions, including the use of safety ramps/arrester beds without penalty. It should be made clear to drivers of heavy vehicles that the advantages of using a safety ramp/arrester bed overwhelmingly outweigh the disadvantages.
- Consider the risk and mitigation strategies outlined in the Master Code and any other relevant codes of practice.

Mechanical safety

The HVNL part 3.2 requires that all heavy vehicles used on a road must comply with the:

- *Heavy Vehicle (Vehicle Standards) National Regulation* and
- Australian Design Rules (ADRs).

These standards set out the minimum safety, construction, and maintenance standards for heavy vehicles, and for the control of emissions and noise.

The National Heavy Vehicle Inspection Manual (NHVIM) provides consistent criteria for carrying out heavy vehicle inspections. The manual provides a consistent standard for identifying when a heavy vehicle is non-compliant and clear guidance on the pass/fail criteria for heavy vehicle components.

The Guide to creating heavy vehicle daily checks (PDF, 375KB) is a useful tool that assists operators and drivers to identify basic safety issues on a heavy vehicle before using it on a road.

Spotlight – South Eastern Freeway, South Australia

The South Eastern Freeway forms part of the Adelaide to Melbourne road corridor and is an important strategic freight route for South Australia. It is recognised as one of the most difficult and challenging routes into Adelaide for heavy vehicles due to

- a long steep descent
- the position of traffic lights
- a major intersection
- traffic congestion from light vehicles and other heavy vehicles and proximity to suburban neighbourhoods.

The last 7kms of the South Eastern Freeway comprises a very long and steep descent that, although the gradient becomes less severe near the bottom, continues downhill through a signalised intersection and into an urban area.

Between 2010 and 2022 there were serious crashes involving heavy vehicles that resulted in four people being killed and thirteen injured, including at least three seriously. This resulted in a review of heavy vehicle safety on the South Eastern Freeway.

In 2010, a man was killed when a laden semi-trailer crashed into a bus stop near the base of the freeway, injuring the truck driver and another member of the public. Contributing factors to the crash included:

- poor gear selection in part due to inexperience and a lack of proper familiarity with both the gearbox and features of the South Eastern Freeway
- maladjustment of trailer brakes
- inappropriate rest hours in the 24-hour period prior due to delivery deadlines
- did not use the safety ramps
- overheating of the prime mover brakes due to constant application.

In January 2014, a laden semi-trailer crashed at the base of the freeway, killing the driver. Contributing factors to the crash included:

- lack of familiarity with the route as the driver had never driven an articulated vehicle down the freeway previously
- vehicle maintenance concerns especially relating to the brakes
- did not use a second safety ramp, despite travelling at a speed over 100km/h at the time
- use of the primary brake to control the vehicle's speed
- inappropriate gear use

In August 2014, two people died when a laden waste management truck crashed into a wall at the base of the freeway. The company was found guilty of failing to adequately train the driver. As part of the investigation, it found that the truck's brake linings were worn and the rear brake drums lining should have been replaced prior to the collision indicating that it was unlikely the rear brakes had been adequately serviced. The Magistrate stated, "As the operator of heavy vehicles, the defendant ought reasonably to have known of the risk to heavy vehicles of brake failure on long downhill routes and the importance of gear selection in a manual vehicle to control the speed of the vehicle and also the importance of ensuring the competence of drivers to undertake such descents".

Following on from the 2010 and January 2014 accidents, there was a coronial inquiry which provided 21 recommendations ranging from legislation changes[1] for harsher penalties, training related to downhill gradients as part of heavy vehicle licences, education campaign directed at compliance with using low gears, improved signage, the government covering the cost of removing a heavy vehicle from a safety ramp, promoting the use of safety ramps, roadworthiness and heavy vehicle maintenance.

The Department for Infrastructure and Transport published a video on how to descend the South Eastern Freeway safely. The video demonstrates how to safely descend the South Eastern Freeway and raises the awareness of the locations and through real life examples, the benefits of using safety ramps.

Heavy vehicle drivers, employers, educators and industry members who use the South Eastern Freeway are encouraged to refresh their knowledge and stay informed of the requirements to use a low gear and safety information by visiting Driving a truck or bus safely on the South Eastern Freeway.

The *Road Traffic Act 1961* applies to speed (Section 45C(1)) and low gear offences (Section 45C(2)) on the South Eastern Freeway. The low gear offences are in lieu of *Australian Road Rule 108* with the intent remaining the same.

Resources

Master Code

Guidance and direction on how to effectively introduce a risk management process within your business can be found in Section 3 of the Master Code

Safety Management System (SMS)

Management of safety risks can be more effective with the adoption, development and active use of an SMS.

An SMS is a systematic approach to managing safety – including the necessary organisational structures, accountabilities, policies and procedures – which is integrated throughout the business wherever possible.

An SMS can help you:

- provide a safer work environment for your employees, customers, contractors and the public
- manage your safety duties under the HVNL
- demonstrate your ability to manage risk and ensure safety
- become an employer of choice and preferred supplier to customers
- make informed decisions and increase efficiency
- allocate resources to the most critical areas that have an impact on safety
- reduce costs associated with incidents and accidents.

Regardless of the size of your business, an effective SMS can help you have an appropriate safety focus and comply with your duty to ensure the safety of your transport activities, so far as is *reasonably practicable*.

Targeted guidance, tools and information about the development and implementation of an SMS is available in the 9 Step SMS Roadmap.

Understand the HVNL and your primary duty

Under the HVNL section 26C, each party in the CoR has a primary duty to ensure the safety of its transport activities, so far as is reasonably practicable. This duty includes an obligation to eliminate or minimise public risks and a prohibition against directly or indirectly causing or encouraging a driver or another person, including a party in the CoR, to contravene the HVNL.

Transport activities

Transport activities include all the activities associated with the use of a heavy vehicle on a road. It includes safety systems, business processes such as contract negotiation and communication and decision making, as well as the activities normally associated with the transport and logistics sector such as training, scheduling, route planning, managing premises, selecting and maintaining vehicles, packing, loading and unloading.

So far as is reasonably practicable

So far as is *reasonably practicable* means an action that can reasonably be done in relation to the duty, considering relevant matters such as:

- the likelihood of a safety risk or damage to road infrastructure
- the harm that could result from the risk or damage
- what the person knows, or ought reasonably to know, about the risk or damage
- what the person knows, or ought reasonably to know, about the ways of removing or minimising the risk, or preventing or minimising the damage
- the availability and suitability of those ways
- the cost associated with the available ways, including whether the cost is grossly disproportionate to the likelihood of the risk or damage.

More information can be found in Regulatory Advice - Reasonably practicable.

Executives of businesses that are parties in the CoR have a distinct duty under the HVNL section 26D to exercise **due diligence** to ensure the business complies with its duty to ensure the safety of its transport activities.

Due diligence

Exercising **due diligence** includes taking reasonable steps to:

- acquire and maintain knowledge about conducting transport activities safely
- understand the nature of the business's transport activities, including the hazards and risks associated with those activities
- ensure the business has, and uses, appropriate resources to eliminate or minimise the hazards and risks associated with its transport activities
- ensure the business has, and uses, processes to eliminate or minimise the hazards and risks associated with its transport activities and that information about hazards, risks and incidents is received, considered and responded to in a timely way.

Examples of **executive due diligence** activities include:

- collecting information about incident rates to see if the safety management plan is working
- participating in industry-led forums and safety seminars
- ensuring work procedures are being followed and result in improvements in safety
- ensuring safety incidents are responded to and investigated
- implementing learnings from the investigation of safety incidents
- ensuring that sufficient resources are allocated to enable implementation and management of the business's risk management activities.

Australian Road Rules

Australian Road Rule 108 – Trucks and buses low gear signs:

1. If the driver of a truck or bus is driving on a length of road to which a trucks and buses low gear sign applies, the driver must drive the truck or bus in a gear that is low enough to limit the speed of the truck or bus without the use of a primary brake.

4. In this rule - primary brake means the footbrake, or other brake, fitted to a truck or bus that is normally used to slow or stop the vehicle

Bus definition

The HVNL defines a bus as a heavy motor vehicle built or fitted to carry more than 9 adults (including the driver).

The Australian Road Rules define a bus as a motor vehicle built mainly to carry people that seats over 12 adults (including the driver).

References

1. ↑ In South Australia, section 45C of the *Road Traffic Act 1961* applies to part of the South Eastern Freeway in lieu of ARR 108. For further information, go to the DIT website.

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