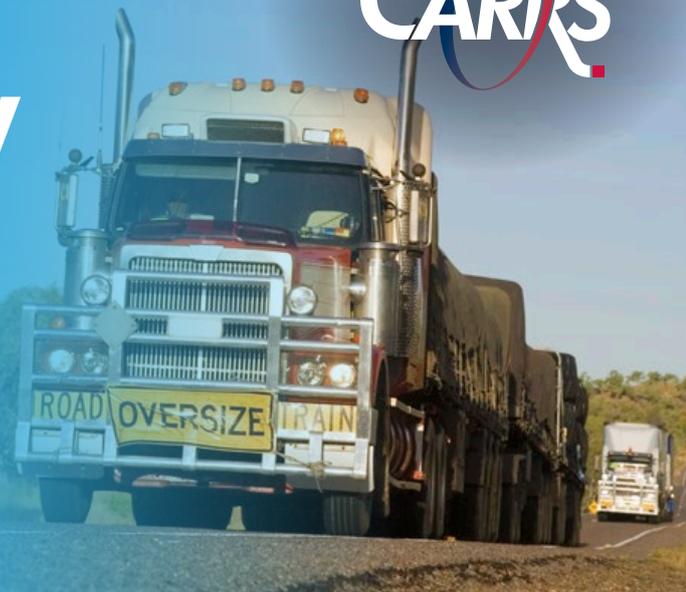


Heavy goods vehicle safety



- Due to the sheer mass of the vehicle and nature of materials transported, heavy vehicle crashes tend to be more serious, resulting in the loss of human life and high cost damages.
- Over 17% of the 2012 Australian road toll can be attributed to crashes involving heavy vehicles.¹



State of the Road A Fact Sheet of the Centre for Accident Research & Road Safety - Queensland (CARRS-Q)

THE FACTS

- Transport is a crucial component of the Australian economy, directly accounting for approximately 5% of Gross Domestic Product, and forming a key input to almost all other sectors of the economy, including the export and import sectors.² Efficient land transportation has long been vital for Australia's economic growth, international competitiveness and social wellbeing.
- Heavy goods vehicles are crucial to the transport sector.
- Rigid trucks and articulated trucks comprised 3.2% of registered vehicles in Australia in 2012,³ yet these vehicles account for 7.1% of the total vehicle kilometres travelled in Australia.⁴

What is a heavy goods vehicle?

- A heavy goods vehicle is a vehicle with a gross vehicle mass of 4.5 tonnes or greater,⁵ which is used to transport goods on the road.
- There are two categories of trucks generally referred to as heavy vehicles:
 - Rigid trucks (eg. tow trucks and garbage trucks) where the tray forms part of the truck body); and
 - Articulated trucks (eg. semi-trailers) - where there is a prime mover or a rigid truck towing one or more trailers. Articulated trucks can be further broken down into B-doubles (which are a semi-trailer with a second smaller trailer between the prime mover and main trailer) and road trains (which are longer than 19 metres and generally have three or more trailers).

Heavy vehicle crash involvement

- In Queensland, during the 12 months to the end of June 2012, 53 people died as a result of heavy goods vehicle crashes (involving heavy rigid and articulated trucks).⁶ This represents 19% of the state road toll for that period.⁷
- In Australia for the same period, 225 people died from 200 crashes involving heavy trucks or buses.⁶ This represents 17.6% of the annual road toll⁷ and included:
 - 124 deaths from 112 crashes involving articulated trucks; and
 - 86 deaths from 73 crashes involving heavy rigid trucks.
- In a report from a leading truck insurance company it was found that during 2011, 461 national truck crash incidents accounted for AUD\$54.7m in claims payments (average overall cost per major crash AUD\$118,600).⁸ Of these crashes the following was found:
 - Inappropriate speed for the prevailing conditions accounted for 25.4% of major truck crashes.
 - Fatigue was the predominant cause of 11.9% of large truck crash losses in 2011. This is a much improved outcome since the same research conducted in 2003 which found fatigue to be the primary cause in over 26% of losses. This change occurred after the introduction of the National Model Legislation for Heavy Vehicle Driver Fatigue Reform, implemented in September 2008, fewer incidents have been attributed to fatigue.
 - 70% of multiple vehicle crashes involving a truck in 2011 were caused by the truck driver. However, 100% of multiple vehicle crashes involving a truck which

led to a fatality was caused by the driver of the other vehicle.⁸

- Over 40% of these crashes occurred on highways.⁸

Be aware of trucks' blind spots and maintain at least a 4 second following distance for visibility and braking.

Action to improve heavy vehicle safety

- Historic legislation was considered in the Queensland Parliament in August 2012, with the passing of the Heavy Vehicle National Law Bill. This was a significant milestone in the establishment of a National Heavy Vehicle Regulator and has paved the way for the introduction of a single, nationally uniform set of laws to govern the operation of heavy vehicles in Australia.⁹
- A number of studies are underway to determine, in greater detail, the causes of heavy vehicle crashes.
- Laws and regulations have been enacted to improve safety, e.g. fatigue management programs such as log books and chain of responsibility laws (in which managers, packers and schedulers can all be charged for applying pressure on a driver to exceed safe driving hours or drive in an unsafe manner).
- A number of industry policies and strategies have been implemented to enhance safety; however, the impact of these on individual drivers' behaviour remains unknown. Heavy vehicle drivers have a key responsibility in achieving

safety outcomes. Research investigating heavy vehicle driving culture will inform behavioural change strategies to support drivers' attitudes towards safety.

- Technological advancements have improved industry safety, such as fatigue recognition to alert the driver, lane positioning monitors, and systems to prevent the vehicle from following too closely.

Challenges for safety improvement

- Drivers possess a high level of autonomy regarding safety behaviours.^{10,11}
- Truck drivers are generally reticent to participate in research projects that focus on their driving behaviours,¹² thus creating a challenge to understand and address safety issues in the heavy vehicle industry.
- Current research projects which are exploring the culture, attitudes, beliefs and values of heavy vehicle drivers are highly significant. By understanding safety from the perspective of the driver and working with them and their employers, improved safety outcomes can be achieved.
- The driving behaviour of the general public around trucks, and awareness regarding the dangers associated with heavy vehicles presents an ongoing challenge.

TIPS FOR STAYING SAFE

It is important to understand how to safely share the road with heavy vehicles:

- **Do not crowd, tailgate or cut in front of trucks.**
- Always **signal your intentions early.**

- **Be aware of trucks' blind spots** at the rear and side of the vehicle. If you can't see a truck's rear vision mirrors, it is likely the truck driver cannot see you.
- When following a truck:
 - **Maintain at least a 4 second following distance** to enable the driver to see you outside his rear blind spot. You may need to allow even greater distance depending on speed and weather conditions.
 - **Beware of air turbulence** behind heavy vehicles and when you pass them.
 - If slowed travelling behind a heavy vehicle, **be patient** and wait for safe space before overtaking.
- When overtaking or travelling in front of a truck:
 - **Allow braking distances.** It takes a heavy vehicle twice the time and room to stop as a car.
 - When moving into a lane in front of a truck, **allow 10 car lengths before changing lanes**, or ensure you can see both the truck's headlights in your rear-view mirror before pulling back in front of the truck or bus. This provides adequate space for the truck driver to slow or stop safely if necessary.
 - **Place wiper blades on high when passing** or meeting a heavy vehicle in rain or snow.
 - Because of their size, heavy vehicles are not always able to turn from within their own lane. **Always watch for signals indicating that a truck may be turning and ensure you leave plenty of space for him to do so.**

CARRS-Q'S WORK IN THE AREA

- The influence of culture on safety in the heavy vehicle industry. (<https://eprints.qut.edu.au/72870/>)
- Fatigue management and investigation into substance abuse in the heavy trucking industry (<https://eprints.qut.edu.au/9364/> and <https://eprints.qut.edu.au/10787/>)
- A review of heavy vehicle insurance data.
- Investigation into the experiences and perceptions of heavy vehicle drivers and train drivers regarding the dangers at railway level crossings. (<https://eprints.qut.edu.au/13908/>)
- Contemporary behavioural influences in an organisational setting and implications for intervention development.
- Identification of barriers to and facilitators for the implementation of occupational road safety initiatives.

FUTURE DIRECTIONS

- Research to better understand the major causes of heavy vehicle crashes.
- Development of best practice heavy vehicle safety interventions taking into account industry needs, effective policy and legislation, the culture of the industry, and driver attitudes and behaviours.
- Continued improvement of the national and state road network to provide the safest possible environment for heavy and other vehicles sharing the road.
- Development of effective interventions to address fatigue, speeding (two major causes of heavy vehicle crashes), and illicit drug use.
- Education interventions and licence tests for the general public to improve safe driving practices around heavy vehicles.

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STATE OF THE ROAD is CARRS-Q's series of Fact Sheets on a range of road safety and injury prevention issues. They are provided as a community service and feature information drawn from CARRS-Q's research and external sources. See the reference list for content authors.

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