

# TEBARS

## Truck Emergency Breakdown And Roadside Safety

### Guidelines



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**Disclaimer:** While all care has been taken in the development of this material, the TISG does not accept any responsibility for the currency of the information or any changes that may occur. This material is for general guidance only and users should always make their own inquiries and seek independent advice where necessary. These guidelines do not replace current laws and are guidelines only for the Transport and Logistics Industry.

## 1. Introduction

The issue of safety around incapacitated trucks on the roadside is a significant safety issue confronting the transport industry along with the wider community.

The aim of this guide is to share guidance in order to eliminate or reduce the potential for injuries where vehicle and people interaction occurs when attending to a broken down truck on the roadside up to the point of requiring towing.

This guidance material has been developed by industry to assist employers, drivers and mechanical service providers to implement effective controls to prevent drivers and other people being injured during the repair of broken down trucks by the roadside. It reflects the outcomes of engagement within workplaces across the supply chain in identifying the 'do's' and 'do not's' of effective separation of people and passing vehicles.

## 2. Legal Obligations

Under existing workplace health and safety laws in all Australian jurisdictions there is a general duty to provide a workplace and systems of work that are safe. These laws require employers to:

1. Implement a process of hazard identification and risk control and review in all systems of work,
2. Provide training (induction and ongoing) to all persons,
3. Consult with employees and safety representatives, whose work is directly affected by decisions or changes in the workplace,
4. Implement and review control measures.

Risks must be eliminated so far as reasonably practicable, or, where it is not possible to eliminate the risk entirely, the risk must be reduced so far as reasonably practicable.

When working on a public road, these workplace safety obligations still apply, but must be carried out within the framework of the National Road Rules, which are adopted in every Australian jurisdiction. The Road Rules dictate where and in what circumstances a vehicle may stop by the roadside.

## 3. Risk Assessment Approach

The process in separating people from passing traffic includes the following steps:

### 1) Risk Identification

The first step is to identify all factors that may contribute to a roadside work incident. Employers and all other parties in the supply chain should develop a list and keep records of all factors that have a potential to cause a roadside incident.

### 2) Risk Assessment

The second step involves assessing each of the risks identified – assessing the likelihood of an event occurring and the expected consequences.

### 3) Risk Control

The third step is deciding on control measures to manage the exposure to an identified roadside risk and implementing the controls in a timely manner.

### 4) Monitor and Review

The fourth step is to monitor and review the effectiveness of control measures and revise if necessary.

## 4. Controlling Roadside Hazards

Best practice will be individualised and applicable to all scenarios given the variables encountered during roadside work. There are many factors that will directly impact on how safe it is to work on a broken down truck. Some of these factors can be controlled, while the impact of some other factors such as weather and behaviour of other road users can only be minimised.

Any best practice system of control must consider the following broad elements of a vehicle breakdown. These three elements are the 'preparation', the 'breakdown event' and 'emergency repairs'.

## 4.1 Preparation

The **Preparation** phase involves ensuring the equipment and personnel are ready in the event of a roadside emergency. Employers should ensure that workers engaged to carry out roadside repairs are trained and equipped to operate safely despite adverse conditions and lack of infrastructure and support at the scene.

It is crucial that the emergency response vehicle attending a scene is appropriately visible to passing traffic and adequately equipped to assist the broken down truck. The following table provides recommendations and actions to achieve this goal.

PREPARATION	<b>FACTORS</b>	<b>RECOMMENDATIONS / ACTIONS</b>
	<b>Staff training</b>	<p>Workers should be trained in working alone by the roadside.</p> <p>This should include training in:</p> <ul style="list-style-type: none"> <li>• First aid.</li> <li>• Traffic management procedures.</li> <li>• Communications systems.</li> <li>• Risk assessments.</li> </ul>
	<b>Visibility</b>	<p>Disabled truck and truck driver should be seen from distance.</p> <p>To achieve this, the following could be considered:</p> <ul style="list-style-type: none"> <li>• A service vehicle with a bright distinctive colour with retro-reflective markings, including the inside of ute trays and cabin openings.</li> <li>• Clothing worn contrasts with the vehicle colour.</li> <li>• A vehicle is illuminated with a suitable warning device such as flash bar or corner light.</li> <li>• Carrying an additional hi-visibility vest (with reflective bands) and portable signs and warning lamps to illuminate the disabled truck and truck driver.</li> </ul>
	<b>Vehicle set up</b>	<p>Adequately equip the repair vehicle. The design and layout of the response vehicle can minimise the roadside risks.</p> <p>Consideration should be given to:</p> <ul style="list-style-type: none"> <li>• Vehicle-mounted crash cushions.</li> <li>• Service vehicle compartments that can be accessed from the left hand side.</li> <li>• The most frequently used equipment should be stowed on the left side to minimise the need to walk on the traffic side of the vehicle.</li> <li>• Auxiliary lighting.</li> </ul>
	<b>Communication</b>	<p>In an emergency, workers need to be able raise the alarm.</p> <p>To achieve this, you could consider:</p> <ul style="list-style-type: none"> <li>• Two-way radio.</li> <li>• GPS Tracking.</li> <li>• Panic/emergency alarm.</li> <li>• Mobile phone.</li> </ul>

## 4.2 Breakdown Event

The timing and location of the **Breakdown Event** is usually unforeseen, but steps can be taken to minimise the risks to the truck driver and the public. The best form of risk control is to avoid the breakdown in the first place. Good vehicle maintenance is essential in reducing the likelihood of a truck breaking down.

If stopping the truck is unavoidable, steps can usually be carried out by the truck driver to minimise the risks. A vehicle doesn't always stop instantly. In the event of a flat tyre or engine trouble, the vehicle will usually be able to coast along for some distance before coming to a stop. Ideally, if a breakdown is occurring, the driver should stop in a location that allows as much clearance from passing traffic as possible.

Other considerations for the breakdown location include:

- The surface hardness and gradient.
- Sufficient room to stop a truck on the shoulder of the road, away from traffic lanes.
- Members of the public that could be an issue (e.g. shops or schools).
- The visibility of oncoming traffic (line of site, especially around corners).
- The nature of the load (e.g. dangerous goods or livestock that shouldn't stop in certain locations).

It is also important to secure the scene once a truck has come to a stop. The truck driver should take reasonable steps to ensure the driver and the truck is not in danger. Consideration also needs to be given to the surrounding environment. Measures should be taken in the truck impacts on other road users or nearby premises or the public. The following table provides recommendations and actions about how to minimise the risks associated with a breakdown event.

<b>BREAKDOWN EVENT</b>	<b>FACTORS</b>	<b>RECOMMENDATIONS / ACTIONS</b>
	<b>When a vehicle is breaking down</b>	<p>If a driver knows the vehicle needs to stop, the following factors should be considered:</p> <ul style="list-style-type: none"> <li>• Is the roadside a hard flat surface?</li> <li>• Is there sufficient room to stop a truck on the shoulder of the road, away from the traffic lane?</li> <li>• Are there any members of the public that could be an issue (e.g., shops or schools)?</li> <li>• Are there corners, bends or intersections that may hide the truck from oncoming traffic?</li> </ul>
<b>Breakdown location</b>	<p>Passing traffic is the single greatest risk. Ideally the breakdown location should allow 3 metres of clearance from passing traffic.</p> <p>If 3 metres clearance is not possible, try stopping in a location where approaching vehicles are visible and the vehicle doesn't encroach onto the roadway.</p> <p>Assess the location to determine whether the vehicle repairs can continue safely at that location.</p> <p>If a clearance cannot be achieved and other measures to minimise the risk are not effective, options to carry out work safely may include:</p> <ul style="list-style-type: none"> <li>• Calling the Police or local State Roads Agency to provide traffic control.</li> <li>• Having the vehicle towed to safe work area before repairs are attempted.</li> </ul>	

# BREAKDOWN EVENT

FACTORS	RECOMMENDATIONS / ACTIONS
<p><b>Vehicle position</b></p>	<p>The truck driver must be clear of passing traffic. Consideration needs to be given to the surroundings. If the truck needs to be worked on the following factors should be considered:</p> <ul style="list-style-type: none"> <li>• If the issue is on the left side, does proximity to crash barriers or other fixtures allow enough room to work on the truck?</li> <li>• If the issue on the front or right hand side of the truck, consider parking as close to the curb as possible whilst turning the front of the vehicle to the left. This will allow additional clearance.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>It is advisable to exit the truck cabin from the left side door. Storing the emergency triangles and portable warning lights on the left side storage compartment will also reduce the driver's exposure to passing traffic.</b></p> </div>
<p><b>Warning other road users</b></p>	<p>The truck must be seen by passing motorists. When a truck does breaks down, the following actions should be considered:</p> <ul style="list-style-type: none"> <li>• Hazard lights should be activated immediately.</li> <li>• Placement of Emergency Warning Triangles behind the vehicle should be at the following distances; <ul style="list-style-type: none"> <li>• Two and a half times the posted speed limit in metres in an 80km/h or above speed limit zone, or,</li> <li>• Twice the posted speed limit in metres in a speed zone below 80-km/h.</li> </ul> </li> </ul> <p>[The placement of triangles is also regulated by national road laws. These laws may require a triangle to be placed in front of a truck in a dual carriageway.]</p> <ul style="list-style-type: none"> <li>• Additionally, electronic flares could also be activated and placed on the rear of the vehicle.</li> </ul>
<p><b>Vehicle stability</b></p>	<p>Avoid the truck collapsing or load falling. Tyre fitting should take place on hard, flat and even surface that is able to withstand load (including the point load of a jack or axle stand).</p> <p>Consider the surface at the location. For example, has recent rain softened the ground? Full or partial unloading of the truck could be considered to increase stability in some circumstances.</p>
<p><b>Isolation of breakdown vehicle</b></p>	<p>Inadvertent operation of the truck should be prevented. The truck should be immobilised through both visible and physical means (such as wheel chocks) in order to achieve this.</p>
<p><b>Hazardous loads</b></p>	<p>Dangerous goods, hazardous materials and livestock can create additional hazards. Ensure that nearby persons are alerted.</p>
<p><b>After the breakdown</b></p>	<p>Debris created by the breakdown can be a danger to other road users. Prior to leaving the site, any parts such as tyre tread or broken fenders should be cleared if it is safe to do so.</p>

## Breakdown Location



Consider the suitability of the



Does the location impede passing traffic?



Is there a more suitable location like a rest stop or service station nearby?



## Vehicle Position



Whenever possible, avoid parking next to a running lane.



Consider exiting from the passenger side.



The single greatest risk to the driver is being struck by a passing vehicle.

## Vehicle Position



Turning the front away from the traffic creates a clearance.  
This allows the driver to exit safely.



## Advance Warning



Advance warning  
should be  
appropriately  
spaced and not  
encroach into a  
running lane.



Triangles should be placed at 2.5 x Speed limit in an 80km/h or above speed zone.  
E.g. 250 meters in a 100 speed zone.

Or 2 x the posted speed limit below 80km/h. E.g. 120 meters in a 60 speed zone.



# Advance Warning



Be seen at night. Triangle position and spacing is important.



Traffic approaching from behind can't see the truck due to the bridge and curve in the road.



The view for traffic is obscured by the bridge.



Triangles give advance warning to other drivers that there is a hazard ahead.



## 4.3 Emergency Roadside Repairs

The **Emergency Roadside Repairs** phase involves assessing the situation and if safe to do so, arranging for a traffic management plan to be initiated.

Traffic management is the process of controlling the risks associated with the movement of traffic through, around or past a work area. The primary hazard is from passing vehicles. The likelihood of an incident occurring combined with the consequence should that incident occur is what determines the level of risk.

It is also important to note that national Road Rule 165(c) states it is a defence to the prosecution of a driver for an offence against the stopping and parking restrictions if;

**“the driver stops at a particular place, or in a particular way, to deal with a medical or other emergency, or to assist a disabled vehicle, and the driver stops for no longer than is necessary in the circumstances”**

This means that a breakdown service vehicle may stop in a location to assist in an emergency if it is reasonable to do so.

For work being carried out by the roadside the major risk factors include:

- Speed of traffic adjacent to or through the work area.
- Clearance between moving traffic, workers and vehicle or equipment.
- Traffic volume and vehicle composition.
- Geometry of the work area, and approaches to the work area.
- Competency of workers carrying out the task.

Other factors to consider include:

- The type of work being carried out.
- Sight distance.
- Major changes in local conditions during the course of the task.
- Time of day.
- Weather conditions.
- Presence of pedestrians or cyclists.

A “drive-by” of the breakdown location should be considered to observe the broken down truck’s location and factors that may impact on the ability to safely work on the vehicle.

The service vehicle should be positioned to provide added traffic control and visual awareness of the site to any passing drivers. Adequate space should be left between the service vehicle and the breakdown vehicle. The vehicle should also be parked slightly over and at a 45 degree angle to the breakdown vehicle to enhance visibility and provide a physical barrier between the work area and passing traffic.

If a clearance is required, it should be established between the nearest traffic lane and the edge of the defined work area. Work should not be performed in the clearance area. If a clearance is not achievable, then a risk assessment of the scene and traffic conditions should take place. A combination of warning lights and signs prominently displayed on the service vehicle can provide a warning to motorists of a roadside activity occurring.

The work may also take place during gaps in traffic if the works are of such a duration that they can be carried out during gaps in the traffic and do not require the placement of roadside signs or delineation provided that;

- (a) a suitable warning device is mounted on the work vehicle,
- (b) a person can see approaching traffic for a distance of at least 150 metres, and
- (c) the work vehicle and equipment do not encroach onto the roadway.

**It should also be noted that regulatory signs, such as a reduced speed limit sign may only be used with prior approval from the relevant Road Authority.**

The use of a buffer vehicle, if practicable, may be a consideration for short term tasks in some circumstances. Having the appropriate warning devices fitted to a buffer vehicle should also give the appropriate advance warning and traffic diversion without the need to set up traffic signs and barriers. The following table provides recommendations and actions to achieve these goals.

<b>ROADSIDE REPAIRS</b>	<b>FACTORS</b>	<b>RECOMMENDATIONS / ACTIONS</b>
	<b>Prior to arrival</b>	Communicate with the truck driver. When a call for assistance is received, consider calling the truck driver. The driver may be able to inform you of any particular issues with the truck or the site prior to arrival.
	<b>Communication</b>	Ensure there is regular contact with repair person. This includes at the beginning and completion of each roadside repair job.  There should also be a means of communication in an emergency.
	<b>Arrival at the scene</b>	Asses the scene. A "drive-by" of the breakdown location should be considered upon arrival at the breakdown scene to observe the broken down truck's location and factors that may impact on the ability to safely work on the vehicle. These factors may include: <ul style="list-style-type: none"> <li>• Traffic volume and vehicle composition.</li> <li>• Layout of the work area and approaches to the work area.</li> <li>• Weather conditions.</li> <li>• Activity of pedestrians or cyclists.</li> </ul> <p>A risk assessment is then carried out upon arrival at the site and traffic controls are implemented to minimise risks to and from oncoming and passing traffic.</p>
	<b>Repair vehicle position</b>	Create a safe work zone. The repair vehicle should be positioned to provide: <ul style="list-style-type: none"> <li>• Traffic control and visual awareness of the site to any passing drivers.</li> <li>• Adequate space to provide a safety barrier to the work area.</li> </ul> <p>Reduce the risk of passing traffic by parking at the front of rear of the disabled truck, depending on where the issue is.</p> <p>If practicable, the vehicle should also be parked at a 45 degree angle to the traffic lane. This will provide maximum visibility and allow the service provider to safely exit the vehicle.</p>
	<b>Advance warning lighting</b>	Provide adequate advance warning. Having a well illuminated service vehicle with retro-reflective markings can alert approaching traffic.  If the service vehicle is parked at the front of the truck, consider attaching portable retro-reflective signage and portable warning lights to the rear of the disabled truck.

# ROADSIDE REPAIRS

FACTORS	RECOMMENDATIONS / ACTIONS
<p><b>Advance warning signage</b></p>	<div data-bbox="655 232 901 414" data-label="Image"> </div> <p><b>TRAFFIC HAZARD AHEAD</b> sign may be used whenever any unexpected event causes a traffic hazard. This sign <b>does not</b> require a permit to use.</p> <p>Warning triangles, advance warning signs and/or traffic bollards should be placed clear of the oncoming traffic lane at a distance in metres twice the posted speed limit. For example:</p> <ul style="list-style-type: none"> <li>• 120 metres ahead of your work site on roads that are 60km/h,</li> <li>• 160 metres on an 80km/h roads or</li> <li>• 200 metres on 100km/h roads.</li> </ul>
<p><b>Is it safe to work?</b></p>	<p>Do not work too close to passing traffic. If possible, work should take place at least 3 metres away from passing traffic. This clearance should be marked by the use of traffic bollards.</p> <p>If a clearance cannot be achieved and other measures to minimise the risks are not effective, options to carry out work safely may include:</p> <ul style="list-style-type: none"> <li>• Calling the Police or local State Roads Agency to provide traffic control if the area cannot be made safe, or,</li> <li>• Having the vehicle towed to safe work area before repairs are attempted. A safe work area may include a side road or a space clear of the running lane such as a truck stop.</li> </ul>
<p><b>After the breakdown</b></p>	<p>Truck debris created by the breakdown can be a danger to other road users. Prior to leaving the site, any parts such as tyre tread or broken fenders should be cleared if it is safe to do so.</p> <p>The repairer's depot is then notified the work has been safely completed.</p>

## Repair Vehicle Position



Whenever possible, avoid parking right next to a running lane.

## Repair Vehicle Position



The risk from passing traffic is present at the rear or the front of the truck.



Equipment stored on the right hand side can not be safely accessed.

## Parking at an angle reduces the risks



Only the rear of the vehicle is visible.



A 45 degree angle increases visibility for passing traffic.

## Repair Vehicle Position: Parking at an angle reduces the risks



Parallel parking leaves little clearance.



A 45 degree angle increases clearance from passing traffic.



In this position, the mechanic is protected from passing traffic and can safely access both sides of the service vehicle.



Parking in front of the disabled truck with clearance between truck and service vehicle creates a safe work zone.

## Repair Vehicle Position: Rear access repair vehicles



Parking parallel to traffic may be required when access to the rear of the vehicle is essential.



In this scenario, parking at a 45 degree angle may introduce hazards.

## Advance Warning: Bollards create a safe work zone



Using traffic bollards with triangles can create a visible barrier between workers and passing traffic.



## Visibility is important in all conditions



## 5. Acknowledgements

This guideline was developed as a specific request from the Victorian Transport Association's On-Road Operators Group. Following identification of a major safety issue around trucks in breakdown situations a group of experienced industry and WorkSafe Victoria representatives worked together over a number of years to complete this guideline. It was finally endorsed by the Victorian Transport Industry Safety Group on Wednesday, 10<sup>th</sup> July 2013.

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- Mr Ivan Fratric - Project Manager, Cut & Fill

This guideline now becomes the state of knowledge in the industry and is freely available to all industry participants.

Copies are available on the various industry websites.

On behalf of the Transport Industry Safety Group we congratulate the Committee for their leadership shown in this important safety issue.

Philip Lovel AM  
Chairman  
Transport Industry Safety Group  
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