A Review of Fatal Road Crashes in Tasmania

Department of Infrastructure, Energy and Resources
A Review of
Fatal Road Crashes
in Tasmania

Traffic & Infrastructure Branch
Department of Infrastructure, Energy and Resources
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<th>Name</th>
<th>Signature</th>
<th>Date</th>
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</tr>
</tbody>
</table>
1. Introduction

Officers from the Traffic and Infrastructure Branch of the Department of Infrastructure, Energy and Resources (DIER) routinely investigate all fatal road crashes in Tasmania. The investigation considers the crash from a traffic engineering and road environment perspective and may recommend physical works that would reduce the risk of similar crashes in the future.

This Report reviews all the fatal road crashes that have occurred in Tasmania during the last five years (2005-2009).

The purpose of the Report is to:

- Improve our understanding of the incidence and circumstances of fatal road crashes in Tasmania.
- Assess whether there are any patterns or trends in the crashes that could be targeted for treatment.
2. Understanding Fatal Road Crashes

2.1 Crash data

Details of all crashes reported to Tasmania Police are recorded on Traffic Accident Report forms that are then electronically stored on the Crash Data Manager computer system which is maintained by DIER.

The Traffic Accident Report categorises the severity of the crash based on the most severe injury that was received by any person involved in the crash. Crash categories are as follows:
- fatal – a person dies within 30 days of the crash;
- serious injury – a person is admitted to hospital for at least 24 hours;
- minor injury – a person is admitted to hospital for less than 24 hours;
- first aid – a person is treated at the scene of the crash; and
- property damage only.

The term ‘casualty crash’ is used to collectively describe fatal, serious injury, minor injury and first aid crashes.

The Table below sets out the crash statistics for Tasmania for the five-year period (2005-2009). The numbers are based on counting each crash once – they do not allow for the fact that more than one person could be injured in the same crash.

<table>
<thead>
<tr>
<th>Severity</th>
<th>Total number of crashes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>220</td>
<td>0.6%</td>
</tr>
<tr>
<td>Serious</td>
<td>1,296</td>
<td>3.7%</td>
</tr>
<tr>
<td>Minor</td>
<td>5,631</td>
<td>16.1%</td>
</tr>
<tr>
<td>First aid</td>
<td>1,977</td>
<td>5.7%</td>
</tr>
<tr>
<td>Property damage</td>
<td>22,597</td>
<td>64.7%</td>
</tr>
<tr>
<td>Not known</td>
<td>3,195</td>
<td>9.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34,916</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 2.1 – Crash history for five-year period (2005-2009)

During the five-year period (2005-2009) there were almost 35,000 reported crashes and over 9,100 of these were casualty crashes (fatal, serious injury, minor injury and first aid).
2.2 Fatal crashes

Fatal road crashes are defined as crashes where a person dies within 30 days as a result of the crash. Some fatal road crashes result in more than one person being killed.

The number of fatal road crashes and the number of people killed in Tasmania during the last five years is shown in Table 2.2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of fatal road crashes</th>
<th>Number of people killed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>49</td>
<td>51</td>
</tr>
<tr>
<td>2006</td>
<td>43</td>
<td>55</td>
</tr>
<tr>
<td>2007</td>
<td>39</td>
<td>45</td>
</tr>
<tr>
<td>2008</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>2009</td>
<td>52</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>220</td>
<td>254</td>
</tr>
</tbody>
</table>

Table 2.2 – Fatal road crashes for the five-year period (2005-2009)

About 11% of fatal road crashes result in more than one person being killed. Table 2.3 presents information about multiple fatality crashes.

<table>
<thead>
<tr>
<th>Number of people killed in crash</th>
<th>Number of crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 person</td>
<td>195</td>
</tr>
<tr>
<td>2 people</td>
<td>17</td>
</tr>
<tr>
<td>3 people</td>
<td>4</td>
</tr>
<tr>
<td>4 people</td>
<td>2</td>
</tr>
<tr>
<td>5 people</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>220</td>
</tr>
</tbody>
</table>

Table 2.3 – Multiple fatality crashes for the five-year period (2005-2009)
2.3 Month of year

The monthly variation in the percentage of all casualty and fatal crashes is shown in Chart 2.1.

Chart 2.1 – Fatal road crashes (2005-2009), Month of year

The typical monthly variation in traffic volumes is shown in Chart 2.2.

Chart 2.2 – Seasonal variation in traffic volumes

It can be seen that the monthly variation in the percentage of casualty crashes is similar to the variation in traffic volumes. However, the monthly variation in the percentage of fatal crashes exhibits much greater variability. Some of this variability may be related to the lower sample size but the lower percentage of fatal crashes in the July to October period is pronounced.
The lower number of fatal crashes occurring in the July to October period is also noticeable when the cumulative number of people killed on the roads is plotted against time for the last five years. (Arrows have been used to highlight the annual cycle.)

![Chart 2.3 – Fatal crashes (2005-2009), annual cycle]

The lower incidence of fatal crashes in the months of July to October is pronounced. It is suggested that the shorter hours of daylight, and the colder, wetter weather reduces the amount of time that people spend out on the roads.

This is particularly true of vulnerable road user groups – that is pedestrians, cyclists and motorcyclists. Other reports by the Traffic and Infrastructure Branch that have specifically examined crash trends associated with these road user groups found that they were involved in significantly fewer crashes during the winter months.
2.4 Day of week

The variation of fatal crashes by day of week shows a greater number of crashes on Fridays, Saturdays and Sundays.

![Chart 2.4 – Fatal road crashes (2005-2009), Day of week](chart)

The Traffic Accident Report form that Tasmania Police complete when they attend a crash includes a section where the Police can record the cause of the crash. Crashes are often multi-factor events and more than one crash cause can be recorded.

Chart 2.5 shows the proportion of fatal road crashes where alcohol was identified as a crash cause. Alcohol was a factor in a substantial proportion of the crashes at the weekend.

![Chart 2.5 – Fatal road crashes (2005-2009), Day of week, Alcohol identified as a crash cause](chart)
2.5 Time of day

The variation of fatal crashes by time of day follows a similar pattern to all casualty crashes but with a noticeably higher proportion of fatal crashes occurring between 2100 and 0200 hrs.

![Chart 2.6 - Fatal road crashes (2005-2009), Time of day](chart-image)

Chart 2.6 shows the proportion of fatal road crashes where alcohol was identified as a crash cause. It can be seen that alcohol is a major factor in fatal crashes that occur in the evening and during the night.

![Chart 2.7 - Fatal road crashes (2005-2009), Time of day, Alcohol identified as a crash cause](chart-image)
2.6 Light condition

Chart 2.8 compares the light conditions for all casualty crashes with those for fatal crashes. It can be seen that a higher proportion of fatal crashes occur at night – about 10% more.

![Chart 2.8 - Fatal road crashes (2005-2009), Light condition](image)

2.7 Speed zone

Chart 2.9 shows the speed zone where the crash occurred. Compared with all casualty crashes, fatal crashes are much more likely to occur on roads with a speed limit of 100 or 110 km/h. The faster a person travels, the more likely they are to crash. If they do crash, the faster a driver travels the more likely they are to be seriously injured or killed.

![Chart 2.9 - Fatal road crashes (2005-2009), Speed zone](image)
2.8 Crash type

Chart 2.10 compares the crash type for all casualty crashes with fatal crashes.

Head-on collisions are the type of crash most likely to result in death. Because the vehicles involved are travelling in opposite directions, the impact speed can be around 200 km/h on a rural road.

![Chart 2.10 - Fatal road crashes (2005-2009), Crash type]

Chart 2.11 shows crash type for fatal crashes only. Single vehicle loss-of-control (off-straight and off-curve) crashes make up 44% of all fatal crashes. Head-on crashes make up a further 32% of crashes. Detailed analysis of head-on crashes has shown that they are mostly caused by one driver losing control of their vehicle and crossing onto the incorrect side of the road. Less than 10% of head-on crashes are associated with overtaking.

![Chart 2.11 - Fatal road crashes (2005-2009), Crash type]
2.9 Road owner

Tasmanian roads can be categorised as follows:
- National Highway network – forms the basis of the Australian Government’s investment in roads in Tasmania – approximately 400 kilometres (2%);
- State maintained roads – approximately 3,250 kilometres (19%); and
- Council maintained roads – approximately 14,000 kilometres (79%).

Over 30% of fatal crashes occur on roads that are part of the National Highway network. This apparent over-representation is because of the higher traffic volumes carried by these roads compared to the average road. The National Highway roads have been built to a higher standard and most of them have a 110 km/h speed limit.

It should be noted that while the number of fatal crashes per kilometre on the National Highway is greater than other Tasmanian roads, it is still very low in absolute terms.

Almost 40% of fatal crashes occurred on State maintained roads.

![Chart 2.12 – Fatal road crashes (2005-2009), Road owner](image)

2.10 Distribution

Fatal crashes are very dispersed – there are few locations where more than one fatal crash has occurred on the same road and within 1 kilometre of another.

The incidence of fatal crashes is so low that it is not statistically significant for the purpose of identifying and prioritising safety works. Established best practice is to select locations based on all casualty crashes (fatal, serious injury, minor injury and first aid) while focusing on the types of crashes that are most likely to result in death. This is the methodology prescribed for setting the Australian Government’s Black Spot Program and it has proven to be extremely successful in delivering road trauma reduction.
2.11 Road user

Chart 2.13 categorises the type of road user that was killed.

![Chart 2.13 - Fatal road crashes (2005-2009), Road user]

Chart 2.14 further disaggregates the type of road user, differentiating between vehicle drivers and vehicle passengers.

![Chart 2.14 - Fatal road crashes (2005-2009), Road user type]

2.12 Cause of crash

Details of all crashes reported to Tasmania Police are recorded on Traffic Accident Report (TAR) forms that are then electronically stored on the Crash Data Manager computer system which is maintained by DIER.

By reading the description and examining the sketch contained in the TAR, it is possible to make an assessment about which road user was most responsible for the crash occurring. The objective of this analysis is not to assign blame but to gain a better understanding of the mechanisms of fatal crashes that can then inform strategies to reduce their incidence.
Each of the 220 TARs for fatal crashes for the five-year period (2005-2009) were analysed accordingly. The total number of crashes is too small to provide statistically robust conclusions but it does provide a useful insight.

The results of the analysis were as follows:

- Almost 90% of vehicle drivers were killed by their own error, and just over 10% were killed by the error of another driver.
- Almost 90% of vehicle passengers were killed by the error of their driver, and just over 10% were killed by the error of another driver.
- About 70% of motorcyclists were killed by their own error, and about 30% were killed by the error of another driver.
- About 70% of cyclists were killed by their own error, and about 30% were killed by the error of another driver.
- Virtually all pedestrians were killed because they didn’t give way to traffic when crossing the road.

It is noted that a significant proportion of fatal road crashes involve unregistered vehicles, unlicenced drivers and vehicle occupants not wearing seatbelts. It has not been possible to compare the incidence of these factors in fatal crashes, with their incidence in all casualty crashes, because the Traffic and Infrastructure Branch does not have access to this information for all casualty crashes.

2.13 Age of road user

Chart 2.14 shows the age of the person killed. It is noted that the percentage of fatal crashes tends to exceed the percentage of all casualty crashes for people aged over 35. Further analysis shows that people aged 17 to 24 years are at the highest risk of being involved in a fatal crash.

![Chart 2.15](image)
3. Discussion

There have been 254 people killed on Tasmanian roads during the last five years (2005-2009).

The incidence of fatal crashes tends to be lower during the July to October period.

There is an over-representation of fatal crashes at the weekend, and in the evening and early hours of the morning. A high proportion of the fatal crashes at these times are alcohol-related. It is suggested that this problem could be targeted by a program of drink-driving enforcement focused on these specific time periods.

Fatal crashes are most likely to occur on roads with a speed limit of 100 or 110 km/h. Single vehicle loss-of-control crashes account for 44% of fatal crashes and head-on crashes account for a further 32%. Most head-on crashes are caused by a driver losing control and crossing onto the incorrect side of the road. Less than 10% of head-on crashes are associated with overtaking.

Loss-of-control and head-on type crashes on rural roads comprise the largest part of Tasmania's road toll. These types of crashes are being targeted for treatment by the Tasmanian Road Safety Strategy – Infrastructure Program, which is being funded by the Road Safety Levy.

Young people are more likely to be killed in crashes with the highest rates amongst 17-24 year olds.

It is noted that a significant proportion of fatal road crashes involve unregistered vehicles, unlicenced drivers and vehicle occupants not wearing seatbelts.