Purpose of Presentation

1. Update Heavy Truck Fatal Crash Trends in NSW and Australia
2. Characteristics for Single Vehicle Heavy Truck Crashes 2010 to 2012
There were 369 fatalities on NSW roads in 2012, five (1%) more than 2011 and the second lowest annual result since 1932.

Since 2002 the road toll in NSW has decreased by 34% compared to 19% for the Rest of Australia.
Since 2002 the road toll has decreased by 34% whereas fatalities from heavy truck crashes have decreased by 40%
Heavy Truck Crash Involvements

- Crashes involving heavy trucks often result in more serious road trauma outcomes, in part because when a heavy truck is involved in a crash their vehicle mass elevates the crash forces involved and hence increases the severity of the crash.

- In 2012, heavy trucks:
  - represented 2.2% of registered motor vehicles in NSW (RMS June 2013)
  - accounted for 6.0% of all motor vehicle travel in NSW (ABS SMVU 2013)
  - crashes involving heavy trucks accounted for 20% of all fatalities on NSW roads. The equivalent rates for previous years were: 17% in 2008, 15% in 2009, 18% in 2010 and 17% in 2011.
Heavy Truck Fatalities v All Fatalities in NSW

### Trends for Fatalities and Fatal Crashes in NSW, 2002 to 2013p

<table>
<thead>
<tr>
<th>Year</th>
<th>All Crashes</th>
<th>Heavy Truck Crashes</th>
<th>Heavy Truck as % of Total</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>2013p</td>
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<td>321</td>
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- In 2013, 56 people were killed in crashes involving a heavy truck. This represents a 22% decrease on the previous year (n=72).
- Heavy truck fatalities accounted for 17% of total fatalities in 2013 compared to 20% in 2012 and 22% in 2002.
Recent Trends for Heavy Truck Fatalities in NSW

### Fatalities From Heavy Truck Crashes, NSW, Year x Month, 2002 to 2013

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<thead>
<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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<td>56</td>
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*2013p preliminary data as at midnight 1/1/2014*

- In 2013 there were an average of five fatalities per month.
- The highest number of fatalities in 2013 occurred in the months of June and October, both recording eight deaths.
- There were 56 fatalities in 2013 period, 16 (22%) fewer fatalities than in 2012.
2012 Fatalities From Heavy Truck Crashes

- Fatalities from heavy truck crashes in 2012 were 14% higher than 2011 and 6% higher than the previous three year average (2009-2011)

Number of Fatalities, Heavy Truck Crashes, NSW, 2009-11 Average, 2011, 2012

- 2009-11 Average: 67.7
- 2011: 63
- 2012: 72
Heavy Truck
Crashes in NSW 2010 to 2012

The number of heavy truck recorded crashes have decreased by 2% between 2011 and 2012. This is largely due to a 13% decrease in injury crashes offset by a 5% increase in fatal crashes and a 6% increase in towaway crashes.

However caution is advised with interpreting these injury results – injury statistics have been found to have been over-reported from the second half of 2010 to the end of 2011 and the 2012 figures are not directly comparable.
The majority of heavy truck crashes involve multiple vehicles, largely either rear end or other angle first impact crash types.

Over-representation of vehicle-pedestrian and head on (not overtaking) impacts for heavy truck fatal crashes are significant.
Heavy Truck Crashes
First Impact Crash Type

- The majority of heavy truck crashes involve multiple vehicles (79%), where key vehicle status is skewed towards the heavy truck (47% to 32%)
- The majority of heavy truck fatal crashes also involve multiple vehicles (69%), but key vehicle status is skewed towards the other vehicle (51% vs 18%)
- Single vehicle crashes here refer to the sum of vehicle-object and vehicle-rollover first impact crashes only

Key vehicle status: The vehicle considered to have played the major contributing role in the first impact but not necessarily the at-fault vehicle in the collision.
Single Vehicle Heavy Truck Crash Characteristics
The following is an analysis of a refined selection of single vehicle heavy truck crashes (definition: vehicle-object or rollover first impact where the heavy truck was the key vehicle)

Over the three year period 2010 to 2012, there were a total of 1220 single vehicle crashes (27 fatal, 570 injury, 623 towaway). This represents 17% of all heavy truck crashes over the same period.

The issues investigated included:

- Day of week, time of day
- Location characteristics
- Behavioural factors involved
- Vehicle factors involved
- Road environment factors
- Heavy truck driver age and State of licence
• Single vehicle heavy truck crashes occur mostly on weekdays, with crashes peaking on Tuesday and Friday (versus peaks on Wednesdays for all heavy truck crashes)

**Single Vehicle Heavy Truck Fatal Crashes, 2010 to 2012, Day of Week**

- Sunday: 11%
- Monday: 15%
- Tuesday: 19%
- Wednesday: 15%
- Thursday: 7%
- Friday: 26%
- Saturday: 7%

**Single Vehicle Heavy Truck Recorded Crashes, 2010 to 2012, Day of Week**

- Sunday: 6%
- Monday: 16%
- Tuesday: 17%
- Wednesday: 21%
- Thursday: 17%
- Friday: 16%
- Saturday: 7%
- Monday: 16%
- Tuesday: 17%
- Wednesday: 21%
• Single vehicle heavy truck crashes are more evenly distributed throughout the day, however fatal crashes exhibit notable peaks between 10pm to 2am and 2pm to 4pm.
• Single vehicle heavy truck crashes peaked on Wednesday, Thursday and Fridays from early morning to early afternoon.
The majority of single vehicle heavy truck crashes and single vehicle heavy truck fatal crashes occur during Periods A, C, I and J.

Single vehicle heavy truck fatal crashes are over-represented during periods I and J, that is between the hours of 9pm and 3am.

**Single Vehicle Heavy Truck Crashes, 2010 to 2012, McLean Period**

- Period A (Mon-Fri 3am to 9am)
- Period B (Sat-Sun 3am to 9am)
- Period C (Mon-Fri 9am-3pm)
- Period D (Sat 9am-3pm)
- Period E (Sun 9am-3pm)
- Period F (Mon-Wed 3pm-9pm)
- Period G (Thu-Fri 3pm-9pm)
- Period H (Sat-Sun 3pm-9pm)
- Period I (Sun-Wed 9pm-3am)
- Period J (Thu-Sat 9pm-3am)
• Single vehicle heavy truck crashes largely occur away from intersections and mostly on curves
• Single vehicle fatal heavy truck crashes are over-represented on curves
• More than a quarter of single vehicle fatal heavy truck crashes and single vehicle heavy truck crashes were on wet roads
Vehicle Object Impacts
Type of Object in First Impact

- Over half (59%) of single vehicle heavy truck crashes involved an impact with a fixed object
- The most common objects struck on first impact were fence/safety barriers and tree/bushes
• The majority of single vehicle heavy truck crashes and single vehicle heavy truck fatal crashes occurred on country rural roads

• This result aligns with heavy truck crashes generally where the majority of non fatal crashes occurred on country rural roads

**Single Vehicle Heavy Truck Crashes, 2010 to 2012, Urbanisation**
As with all heavy truck crashes, single vehicle heavy truck crashes tend to occur on RMS classified roads, with the majority of single vehicle heavy truck fatal crashes occurring on State Highways.
Location of Single Vehicle Heavy Truck Crashes in Sydney RMS Region

- Concentrations of single vehicle heavy truck crashes along the Great Western Hwy, Hume Hwy and Port Botany Precinct
Location of Single Vehicle Heavy Truck Crashes in Northern RMS Region

- Concentrations of single vehicle heavy truck crashes along the Pacific Hwy, New England Hwy and Kamilaroi Hwy
Location of Single Vehicle Heavy Truck Crashes in Hunter RMS Region

- Concentrations of single vehicle heavy truck crashes along the Pacific Hwy and New England Hwy
Location of Single Vehicle Heavy Truck Crashes in Southern RMS Region

- Concentrations of single vehicle heavy truck crashes along the Hume Hwy, Princes Hwy and Picton Rd
Location of Single Vehicle Heavy Truck Crashes in South West RMS Region

- Concentrations of single vehicle heavy truck crashes along the Newell Hwy, Olympic Hwy, Hume Hwy and Sturt Hwy
• Concentrations of single vehicle heavy truck crashes along the Newell Hwy, Great Western Hwy and Mid Western Hwy and around Bathurst
Over half of all single vehicle heavy truck crashes and single vehicle heavy truck fatal crashes occur in high speed zones (100km/h or more).
Road User Movements

- Almost 60% of single vehicle heavy truck crashes involve an off path on a curve road user movement.
- The majority of single vehicle heavy truck crashes involve the heavy truck leaving the road on the left side.
- Over a fifth (21%) involve off path to the left on a right hand curve, 21% involve off path to the left on a straight, 12% involve off path to the right on a straight and 8% out of control on a bend.
Contributing Behavioural Factors

- Compared with all heavy truck crashes, speed and fatigue are over-represented in single vehicle heavy truck crashes.
- Compared with single vehicle heavy truck crashes, speed and fatigue are present at higher levels in single vehicle heavy truck fatal crashes.

Single Vehicle Heavy Truck Crashes, 2010 to 2012,
Contributing Behaviour Factors

<table>
<thead>
<tr>
<th>Contributing Behaviour Factor</th>
<th>Percentage of Recorded Crashes</th>
<th>Percentage of Fatal Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>Illegal Alcohol</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>
• One third (33%) of heavy truck drivers killed and one in sixteen (6%) injured in single vehicle heavy truck crashes were not wearing an available restraint.

• Heavy vehicle truck drivers killed in single vehicle heavy truck crashes who were not wearing an available restraint were over-represented compared with heavy trucks in all crashes, car/car derivatives and light trucks.

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**Percentage of Driver Casualties Not Wearing An Available Restraint, 2010 to 2012, Degree of Casualty, Type of Vehicle**

- **Heavy Truck (Single Vehicle Crashes Only)**
- **Heavy Truck (All Crashes)**
- **Car/car derivative**
- **Light Truck**
• One in seven (15%) of heavy trucks involved in single vehicle heavy truck crashes had an equipment failure recorded for that heavy truck.

• The most common equipment failures recorded were tyre failure, insecure/projecting load or brake failure/fault.

Heavy Trucks in Single Vehicle Crashes with Equipment Factor, 2010 to 2012, Type of Vehicle Equipment Factor:

- Brake failure/fault: 16%
- Insecure/projecting load: 25%
- Tyre failure/fault: 22%
- Tyre tread smooth: 7%
- Wheel/susp failure/fault: 6%
- Tow/couple fault/separation: 8%
- Other equipment failure/fault: 10%
- Steering failure/fault: 6%
Almost three quarters (73%) of heavy trucks involved in single vehicle heavy truck crashes were carrying a load.

The most common load for articulated trucks were refrigerated goods, grain/produce or building materials, and for heavy rigid trucks with garbage or gravel.
Unusual Factors for Heavy Trucks Involved in Single Vehicle Crashes

• One third (33%) of heavy trucks involved in single vehicle heavy truck crashes had an unusual factor recorded for that heavy truck.
• The most common unusual factor recorded was skidding/sliding.

Heavy Trucks in Single Vehicle Crashes with Unusual Factor, 2010 to 2012, Type of Unusual Factor:
- Skidding/sliding: 72%
- Jack-knifing: 19%
- Swaying: 8%
- Slipping, pkd/stat: 1%
Almost one in five (19%) of heavy trucks involved in single vehicle heavy truck crashes had a distraction factor recorded for that heavy truck.

The most common distraction factor recorded was asleep/drowsy followed by distraction inside the vehicle and then sudden illness.
Driver Errors for Heavy Trucks Involved in Single Vehicle Crashes

- Over one third (35%) of heavy trucks involved in single vehicle heavy truck crashes had a driver error recorded for that heavy truck.
- The most common driver errors recorded were loss of control, avoiding another vehicle and avoiding an animal.
Heavy Truck Drivers Involved – Type of Vehicle

- Articulated trucks are over-represented in single vehicle heavy truck fatal crashes

**Heavy Truck Drivers Involved in Single Vehicle Heavy Truck Fatal Crashes, 2010 to 2012, Type of Motor Vehicle**

- Articulated Truck Driver, 85%
- Heavy Rigid Truck Driver, 15%

**Heavy Truck Drivers Involved in Single Vehicle Heavy Truck Crashes, 2010 to 2012, Type of Motor Vehicle**

- Articulated Truck Driver, 68%
- Heavy Rigid Truck Driver, 32%
Heavy Truck Drivers Involved – Age of Driver

• Heavy truck drivers aged under 30 and 50 to 59 years involved in single vehicle heavy truck fatal crashes are over-represented

Percentage of Heavy Truck Drivers Involved in Single Vehicle Heavy Truck Crashes, 2010 to 2012, Age of Heavy Truck Driver
Heavy Truck Drivers Involved – State of Licence

- Compared to all heavy truck fatal crashes, interstate drivers of articulated trucks are over-represented in single vehicle heavy truck fatal crashes
- NSW licence holders account for two-thirds of all heavy truck drivers involved in single vehicle heavy truck crashes

![Percentage of Heavy Truck Drivers Involved in Single Vehicle Heavy Truck Crashes, 2010 to 2012, State of Licence for Heavy Truck Driver](chart.png)
Summary of Results

Single vehicle heavy truck crashes (where a heavy truck was the key vehicle in a vehicle-object or vehicle rollover first impact) accounted for 17% of all heavy truck crashes during the three year period 2010 to 2012.

Compared with heavy truck crashes generally, single vehicle heavy truck crashes are more likely to involve:

- articulated trucks
- high speed rural State Highways
- early morning to early afternoons on Wednesdays, Thursdays and Fridays
- curves, particularly off to the left side of the road, as well as wet road surface
- behavioural factors such as speed or fatigue (asleep/drowsy), as well as driver distraction inside the vehicle and sudden illness
- vehicle factors such as tyre failure, insecure/projecting load, brake failure or fault or skidding
- driver errors such as loss of control or avoiding another vehicle or an animal
- articulated trucks loaded with refrigerated goods, grain or produce or building materials or heavy rigid trucks loads with garbage or gravel.