



Transport
for NSW

Centre for Road Safety



Motorcycle trauma trends

Report

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1 Trends for fatal and serious injury crashes involving motorcyclists since 2008

The following overview of motorcycle involvement in NSW road trauma is limited to the most recent available data. For fatal crashes this covers the calendar years 2008 to 2016p, where the 2016 data are preliminary and subject to change.

For serious injury crashes this covers the calendar years 2008 to 2015 – data for the calendar year 2016 data were incomplete at the time of this report and therefore not included. There is a short discussion regarding total hospitalisations of motorcyclists but generally only the matched serious injury data were used in the analysis since detailed crash characteristics are not available for the unmatched serious injuries.

A motorcycle crash is a crash involving at least one motorcycle where a motorcycle is defined as a motorcycle, motorcycle with a sidecar, police motorcycle, motor scooter, mini-bike, moped / motorised pedal cycle or special mobility vehicle.

A fatal crash is a road traffic crash which results in at least one person dying within 30 days of the crash as a result of injuries from the crash. A serious injury crash is a road traffic crash which involved at least one person admitted to hospital (and matched to a person in a Police crash report), but there were no fatalities from the crash.

1.1 Motorcycle fatalities and serious injuries since 2008

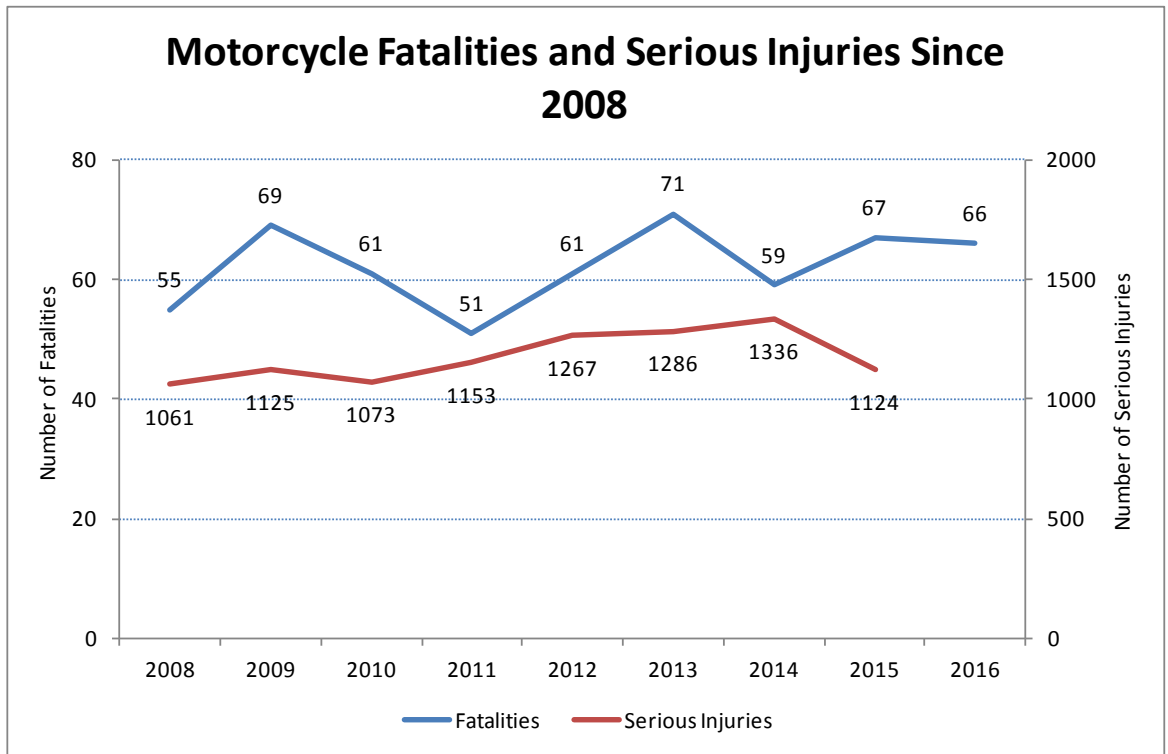
From 2008 to 2016 there were a total of 555 fatal crashes involving a motorcycle, resulting in 569 fatalities. Of these fatalities the majority (560) were motorcycle riders or pillion passengers. Motorcycle fatalities accounted for at least 17 per cent of all road fatalities in NSW over this period.

Whilst the overall number of fatalities has been trending downwards in NSW, the trend for motorcycle fatalities has been trending up slightly. Motorcyclist fatalities as a percentage of all fatalities have risen from 15 per cent in 2008 to a peak of 21 per cent in 2013 but have fallen back to 17 per cent in 2016.

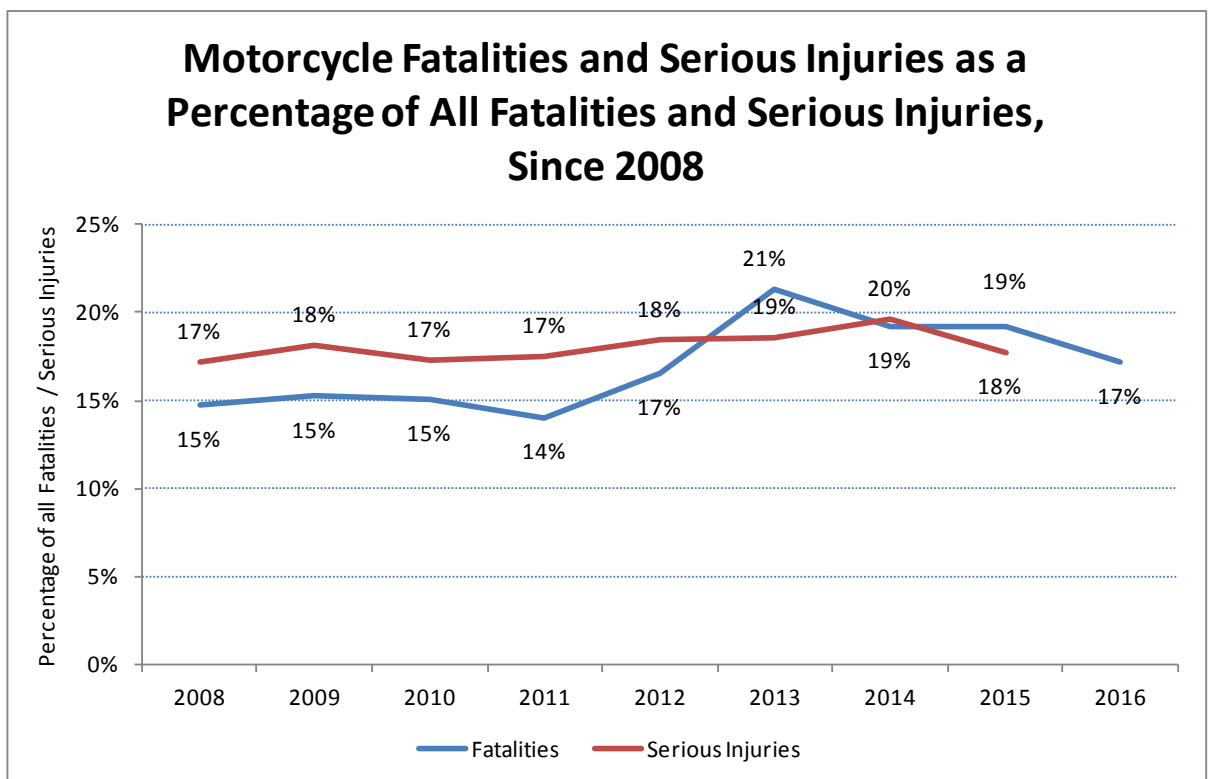
From 2008 to 2015 there were a total of 9,675 serious injuries from motorcycle crashes, of which 9,425 were motorcyclist serious injuries, representing at least 18 per cent of all matched serious injuries in NSW over this period.

Motorcycle serious injuries as a percentage of all serious injuries have also been experiencing an increasing trend – from 17 per cent in 2008 to 20 per cent in 2014.

Given motorcycles represent only 4 per cent of all registered motor vehicles in NSW (see later section), motorcyclists are clearly over-represented in fatality and serious road trauma in NSW.



1.2 Motorcycle fatalities and serious injuries as a percentage of all fatalities and serious injuries, since 2008



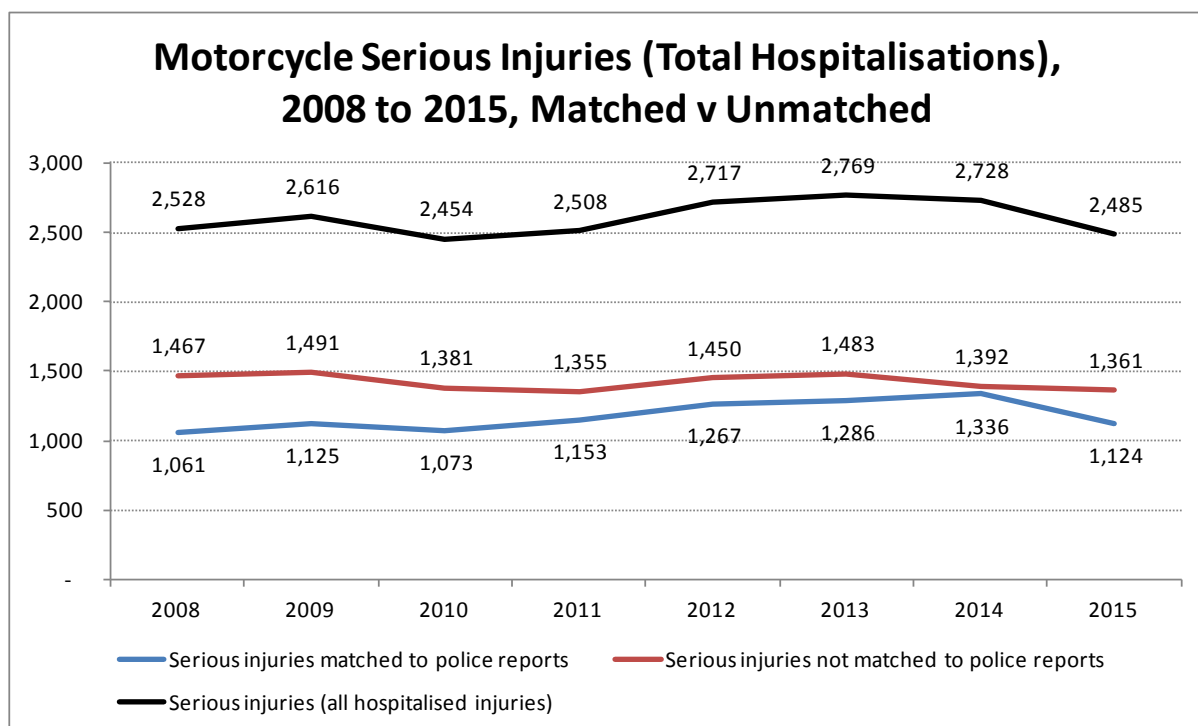
1.3 Total hospitalisations NSW 2008 to 2015

The overall extent of serious injury trauma amongst motorcyclists is considerably larger than the numbers that have been matched to a Police crash report. The table below shows that more than half (55 per cent) of all motorcyclist hospitalisations from a road traffic crash are not matched to a Police crash report. Only pedal cyclists have a higher unmatched percentage (82 per cent).

Road User Class, Matched/Unmatched to a Police Crash Report				
Hospitalisations				
	Matched	Unmatched	Total	% Unmatched
Driver	26781	5167	31948	16%
Passenger	7532	5746	13278	43%
Motorcyclist	9425	11380	20805	55%
Pedestrian	5835	3384	9219	37%
Pedal Cyclist	2601	12127	14728	82%
Other road user	7	5368	5375	100%
Total	52181	43172	95353	45%

1.4 Motorcycle serious injuries (total hospitalisations) 2008 to 2015, matched v unmatched

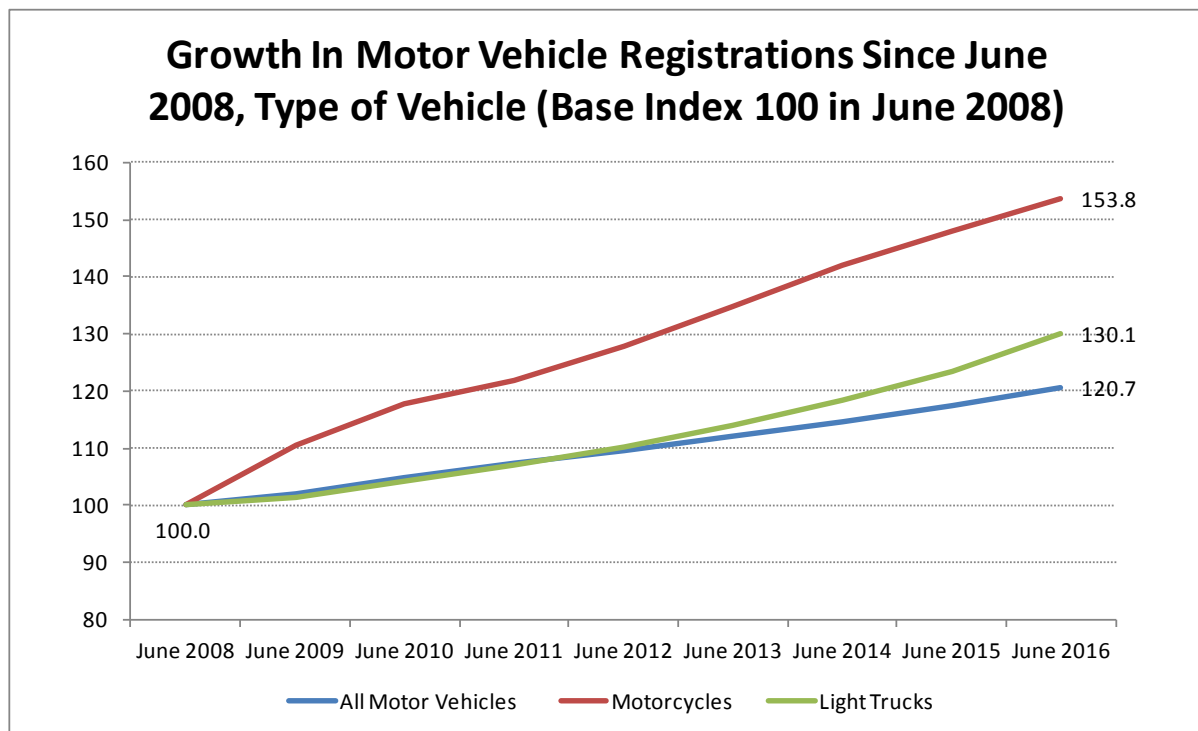
Over the period 2008 to 2015 the level of unmatched motorcycle serious injuries has been relatively steady whilst the number of matched motorcycle serious injuries has been steadily increasing through to 2014.



1.5 Growth in motor vehicle registrations since June 2008, type of vehicle (base index 100 in June 2008)

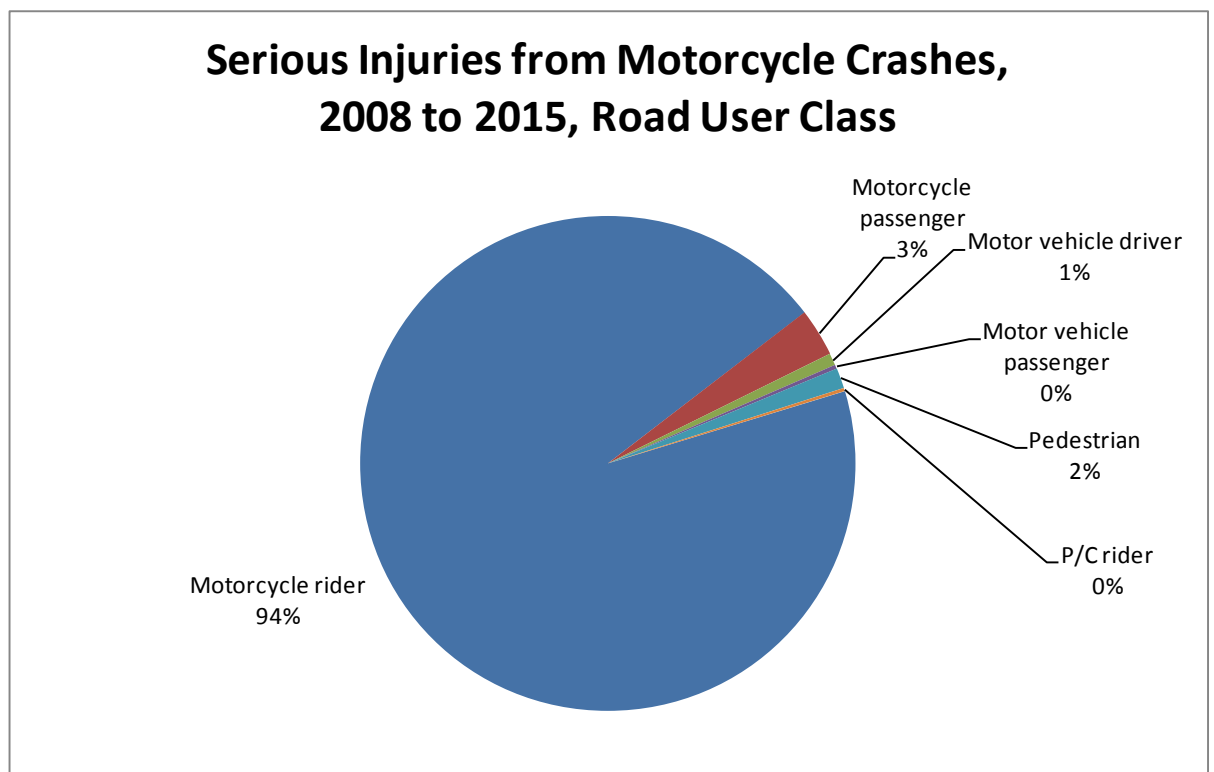
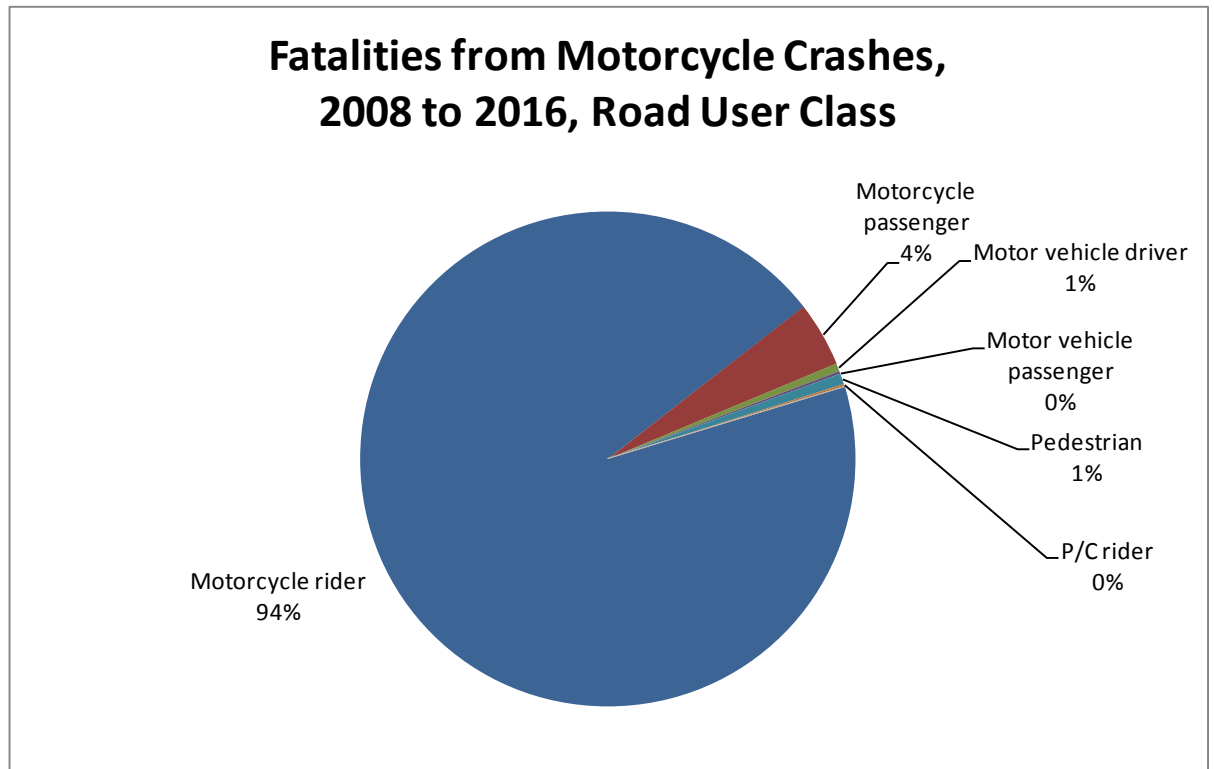
As is generally well known, the growth in motorcycle registrations has been a contributing factor behind the apparent lack of road trauma reductions for motorcyclists.

Between 2008 and 2016 motorcycle registrations increased by 54 per cent whilst overall motor vehicle registrations increased by only 21 per cent. The proportion of all motor vehicle registrations which are motorcycles has consequently increased from 3.3 per cent in 2008 to 4.2 per cent in 2016.



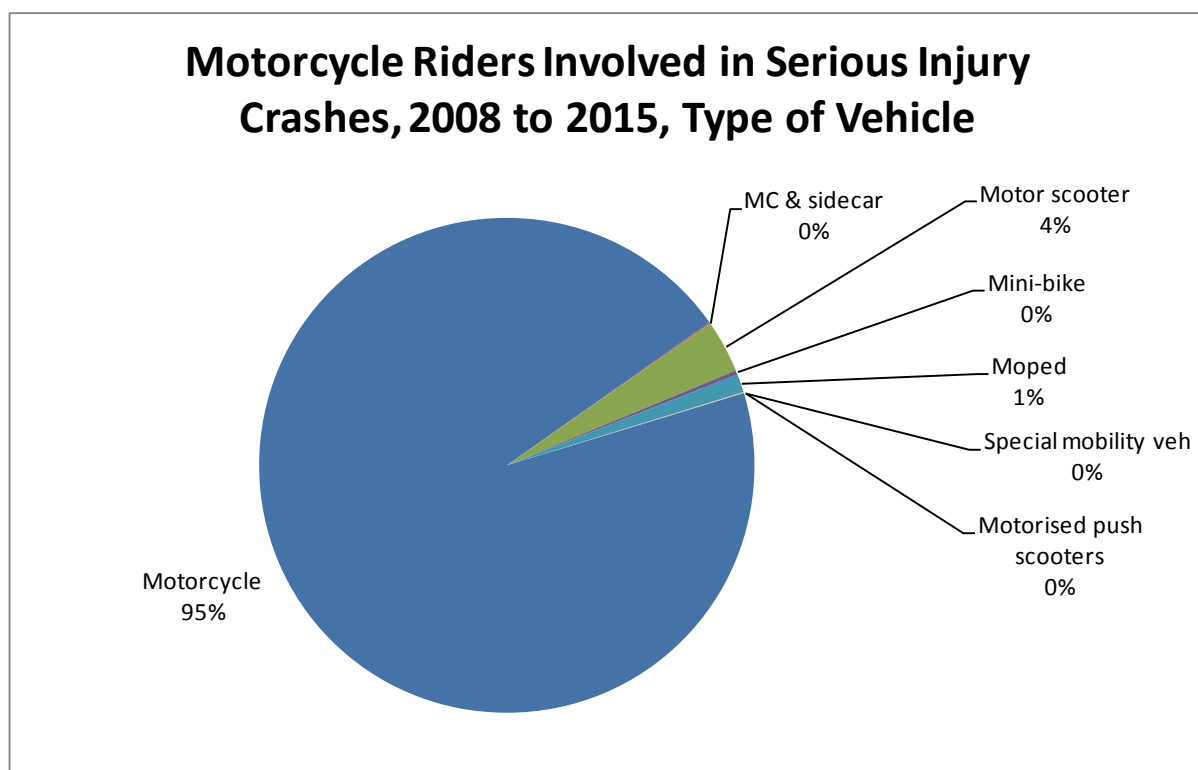
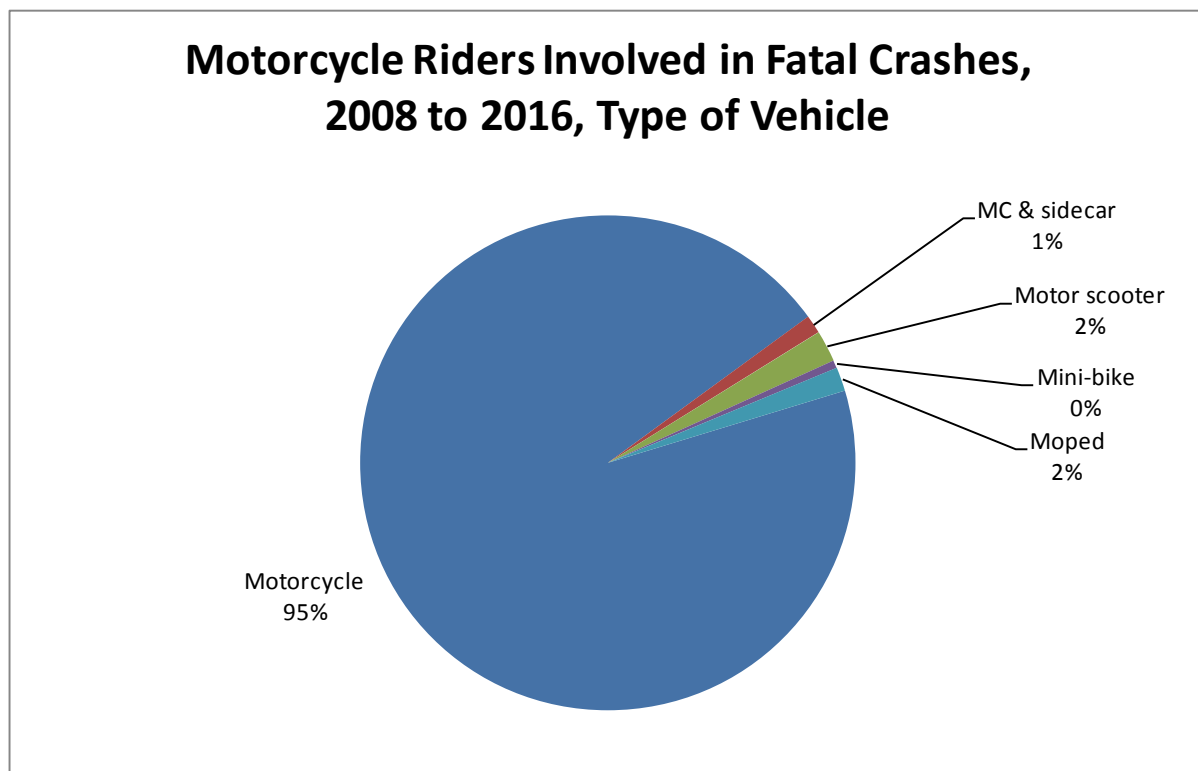
1.6 Fatalities from motorcycle crashes 2008 to 2016, road user class

As mentioned previously, the majority of fatalities and serious injuries from motorcycle fatal and serious injury crashes are motorcycle riders (94 per cent of fatalities and serious injuries) or motorcycle passengers (4 per cent of fatalities and 3 per cent of serious injuries).



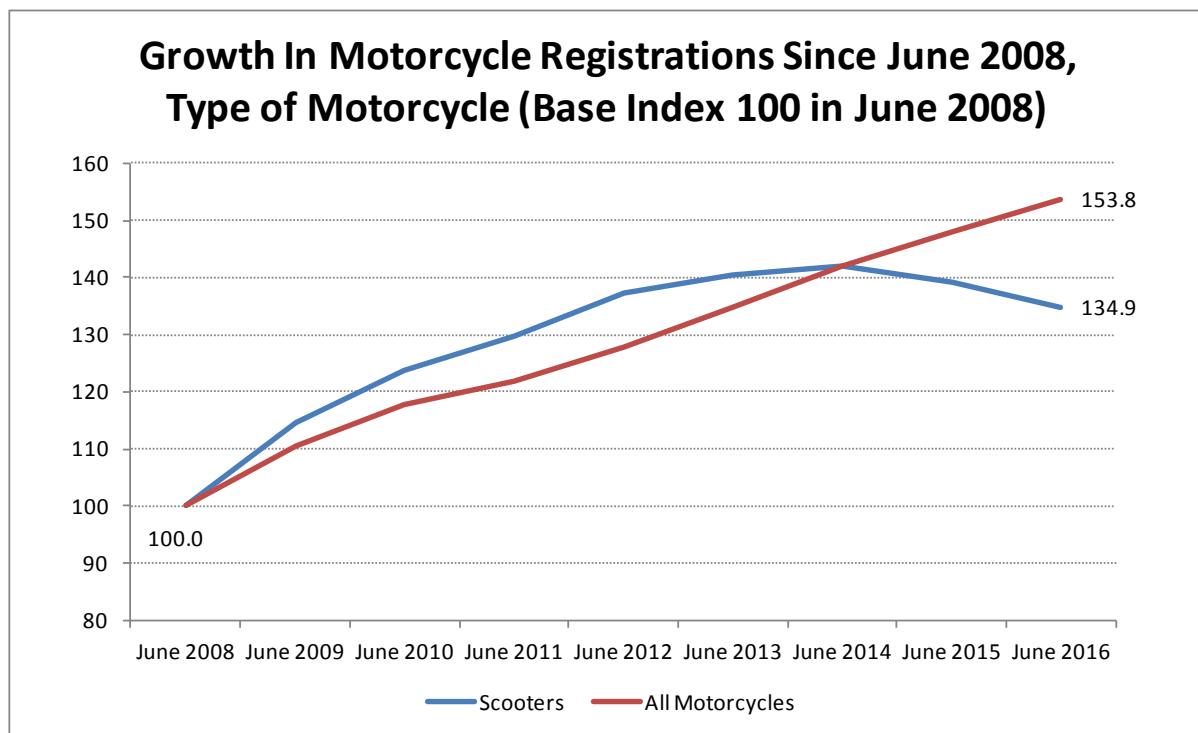
1.7 Motorcycle riders involved in fatal crashes 2008 to 2016, type of vehicle

Whilst there have been increases in variants of motorcycles (such as scooters) the majority (95 per cent) of motorcycle riders involved in fatal and serious injury crashes are riders of the traditional style of motorcycle. Motor scooter riders account for only 2 per cent of fatal and 4 per cent of serious injury involvements.



1.8 Growth in motorcycle registrations since June 2008, type of motorcycle (base index 100 in June 2008)

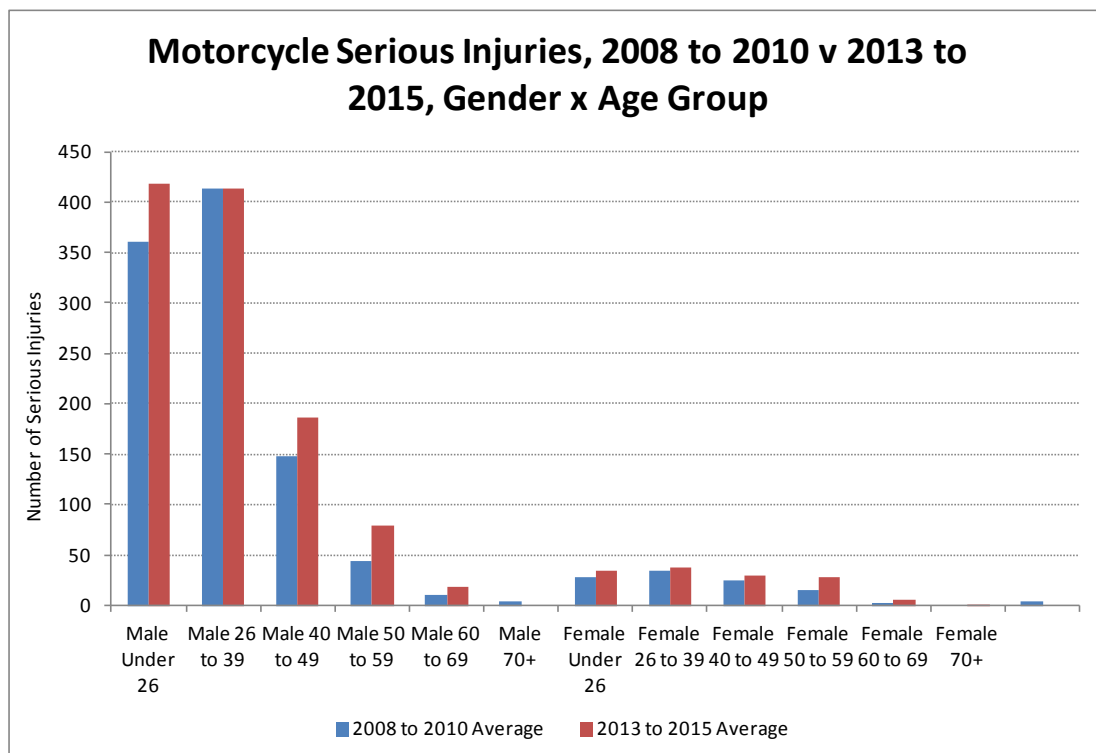
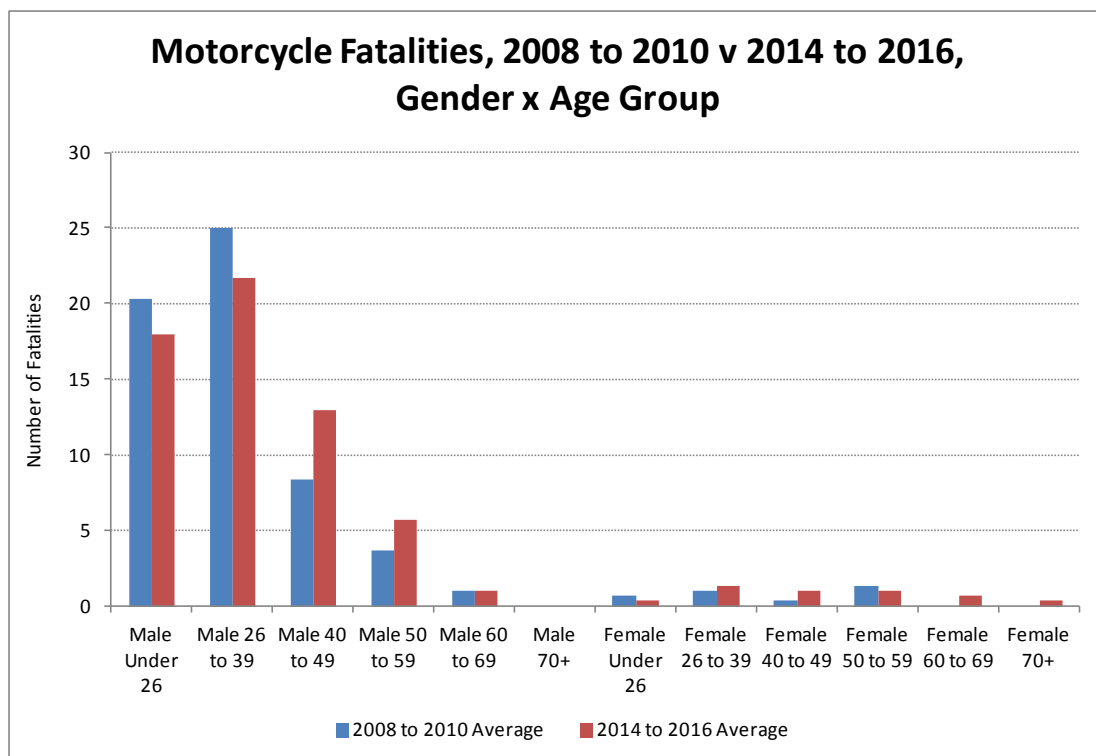
There had been rapid growth in motor scooter registrations up until 2012, even greater than the overall growth in motorcycle registrations. However since 2012 motor scooter registrations have levelled off and started to decline. By June 2016 motor scooters accounted for only 6.3 per cent of all motorcycle registrations.



1.9 Motorcycle fatalities 2008 to 2010 v 2014 to 2016, gender x age group

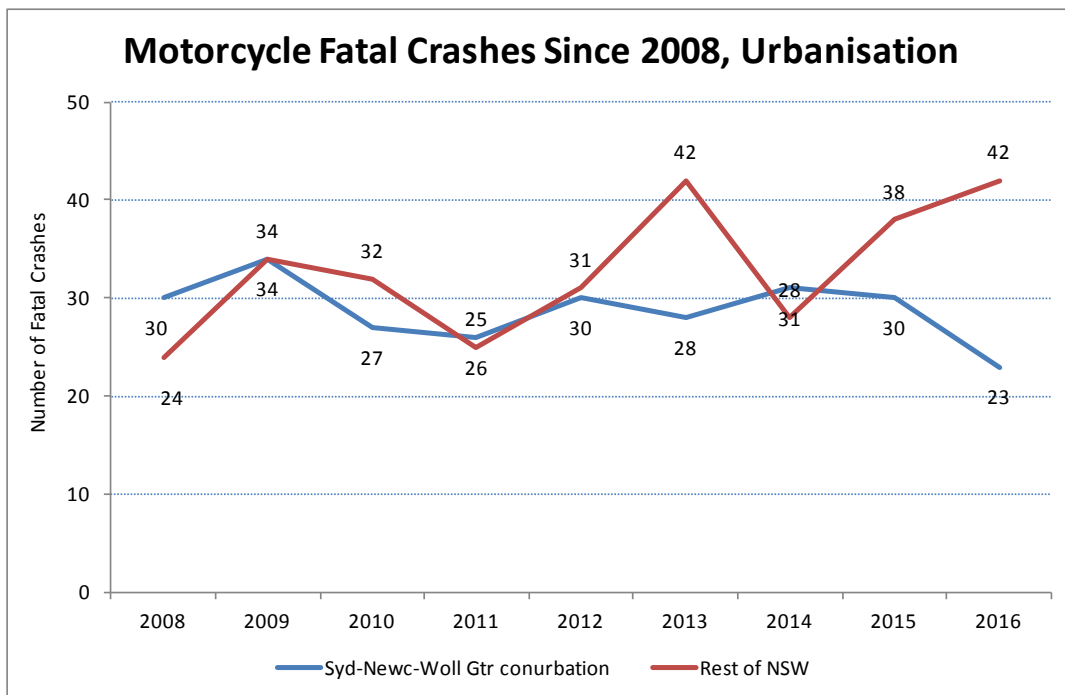
The majority of motorcycle fatalities and serious injuries are males, in particular males aged under 50 years.

However, fatalities and serious injuries have increased between 2008-10 and 2014-16 (2013-15 serious injuries) for those males aged between 40 and 59 years.



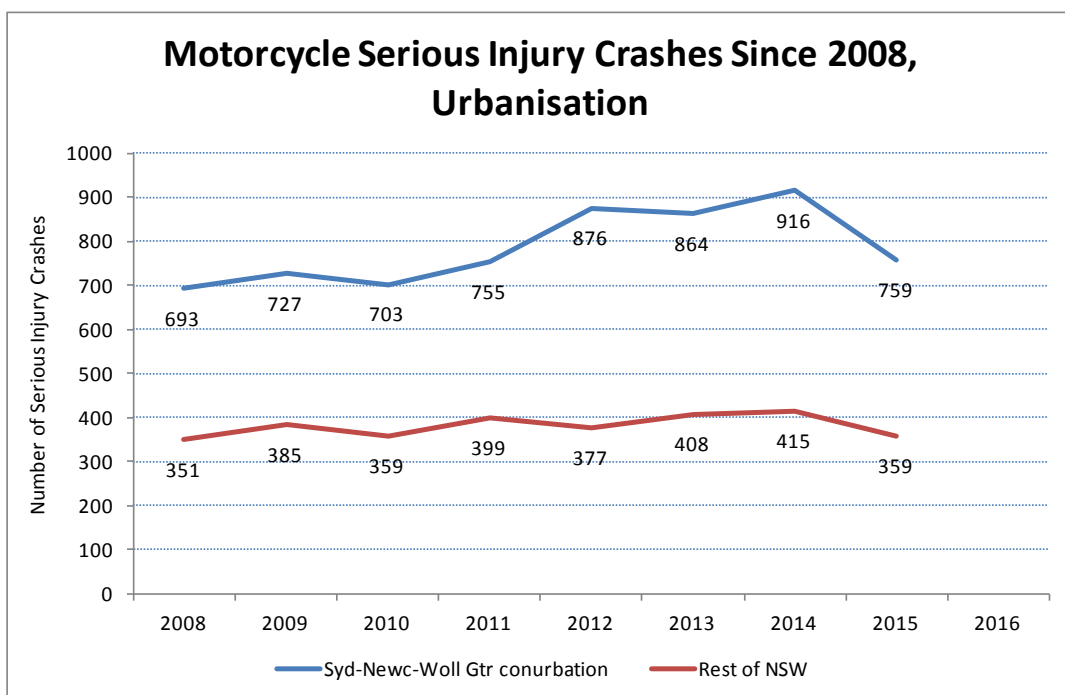
1.10 Motorcycle fatal crashes since 2008, urbanisation

Over the period 2008 to 2016 a small majority of motorcycle fatal crashes occurred in country areas of NSW. However, in recent years there has been an increase in motorcycle fatal crashes outside the Sydney, Newcastle and Wollongong Greater Conurbation.



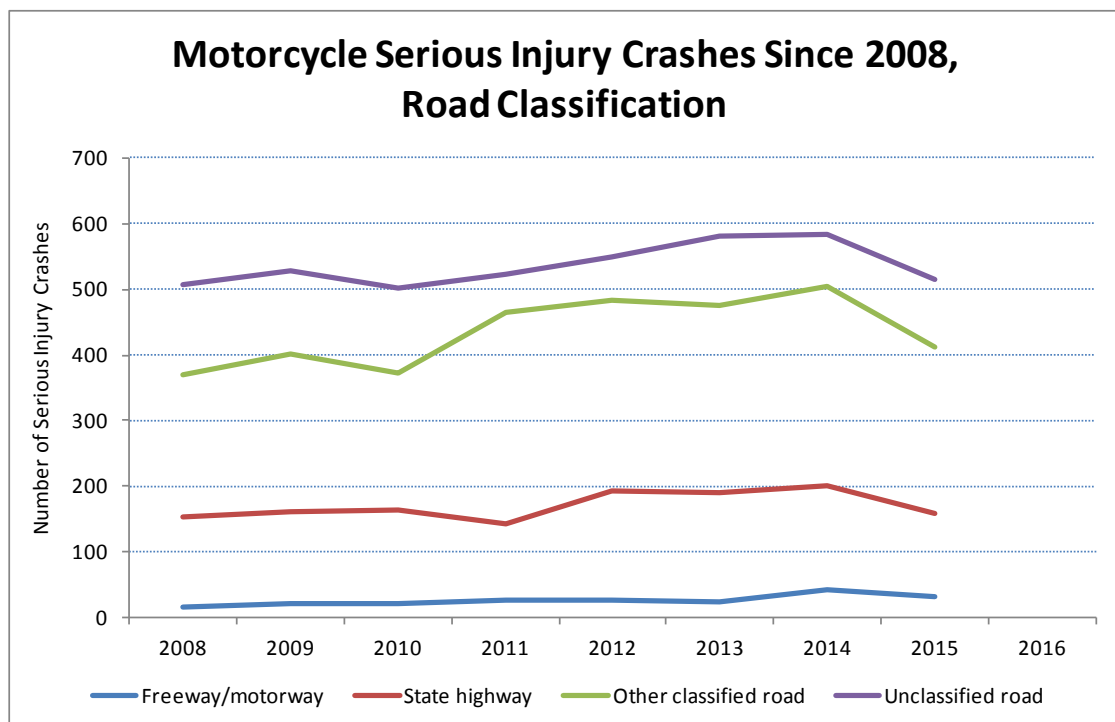
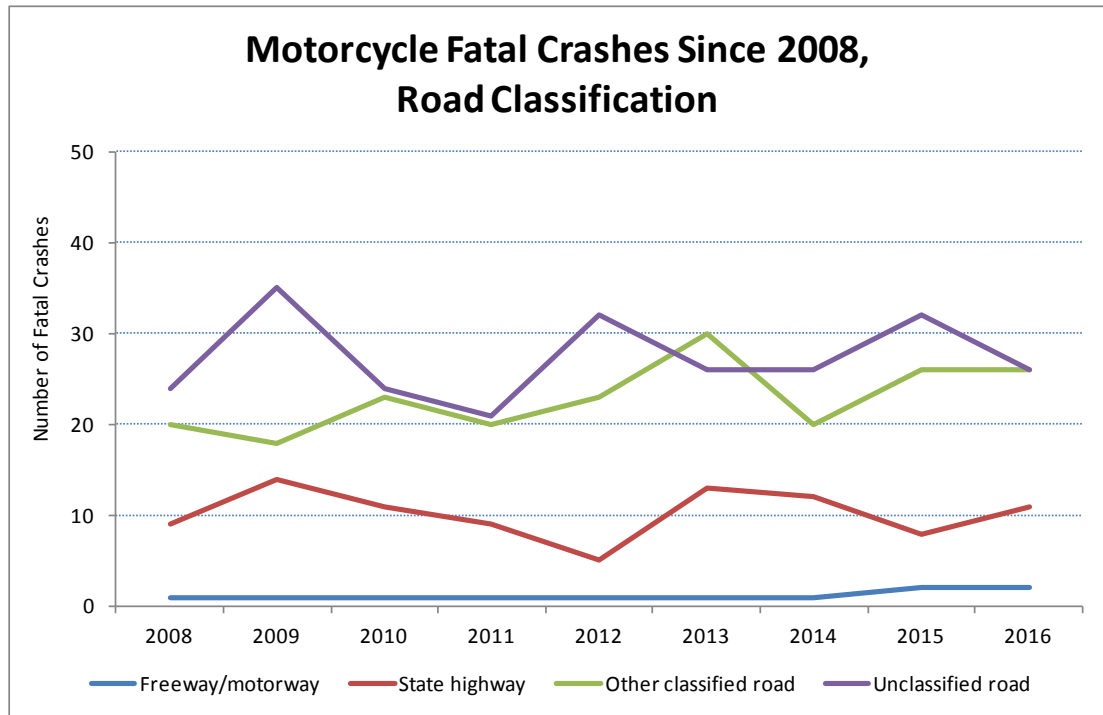
1.11 Motorcycle serious injury crashes since 2008, urbanisation

Over the period 2008 to 2016 around two-thirds of motorcycle serious injury crashes (67 per cent) occurred on roads in the Sydney, Newcastle and Wollongong Greater Conurbation. Until 2014 motorcycle serious injury crashes were increasing on these roads at a greater rate than the respective increase on country roads.



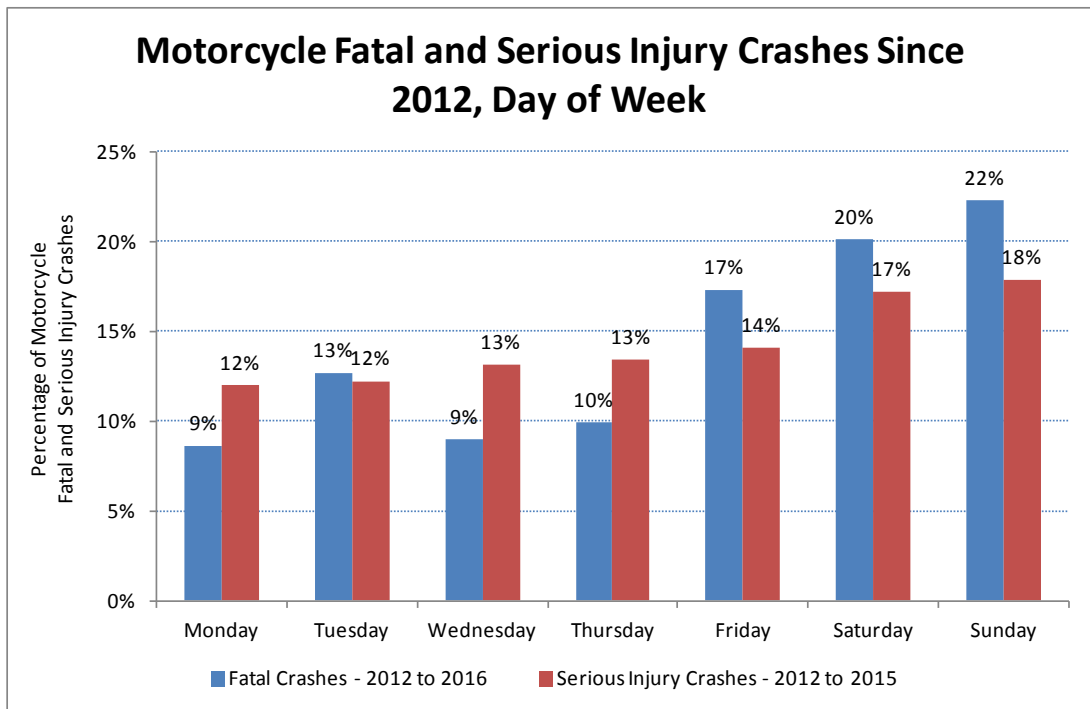
1.12 Motorcycle fatal crashes since 2008, road classification

Over the period 2008 to 2016 the majority of motorcycle fatal crashes occurred on unclassified (local) or lower order classified roads. However, amongst motorcycle serious injury crashes the largest category is unclassified roads, accounting for almost half (46 per cent) of all motorcycle serious injury crashes.



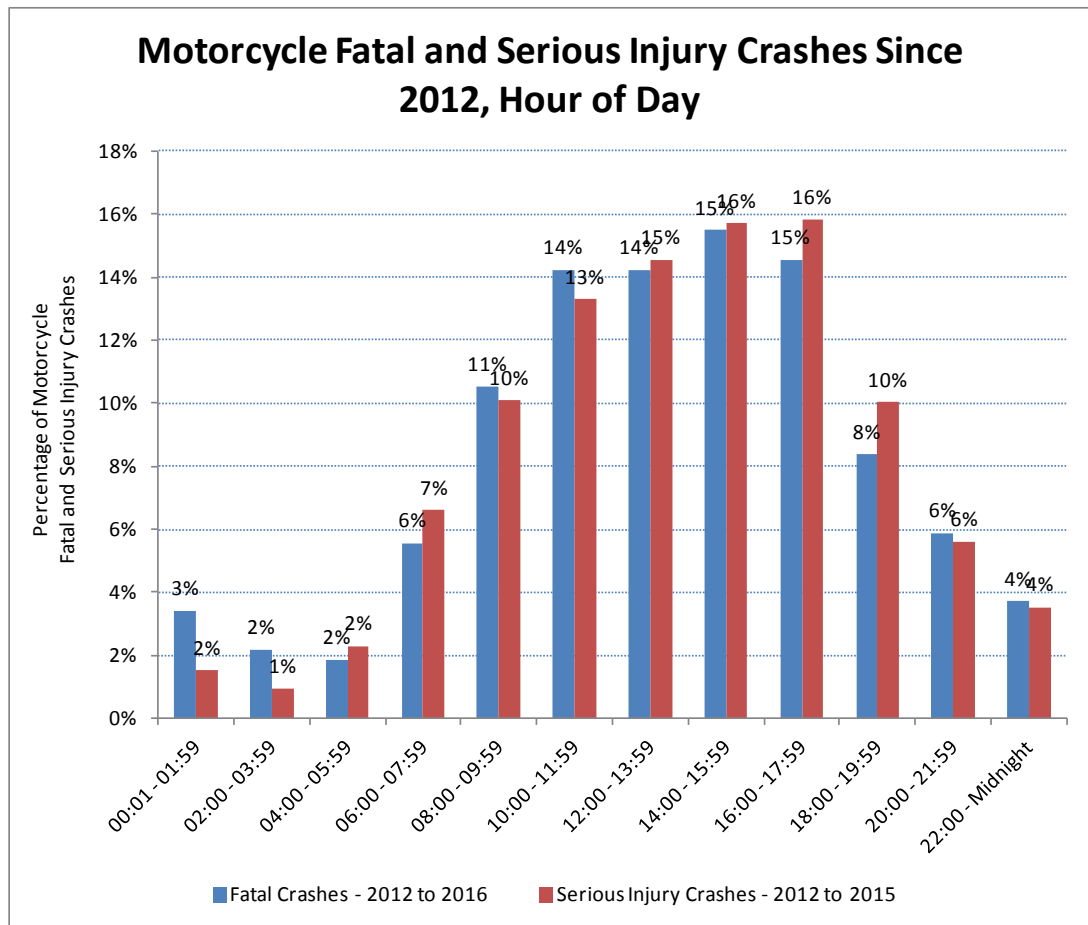
1.13 Motorcycle fatal and serious injury crashes since 2012, day of week

Since 2012 motorcycle fatal and serious injury crashes generally increase through the week and peak from Friday to Sunday, particularly for fatal motorcycle crashes.



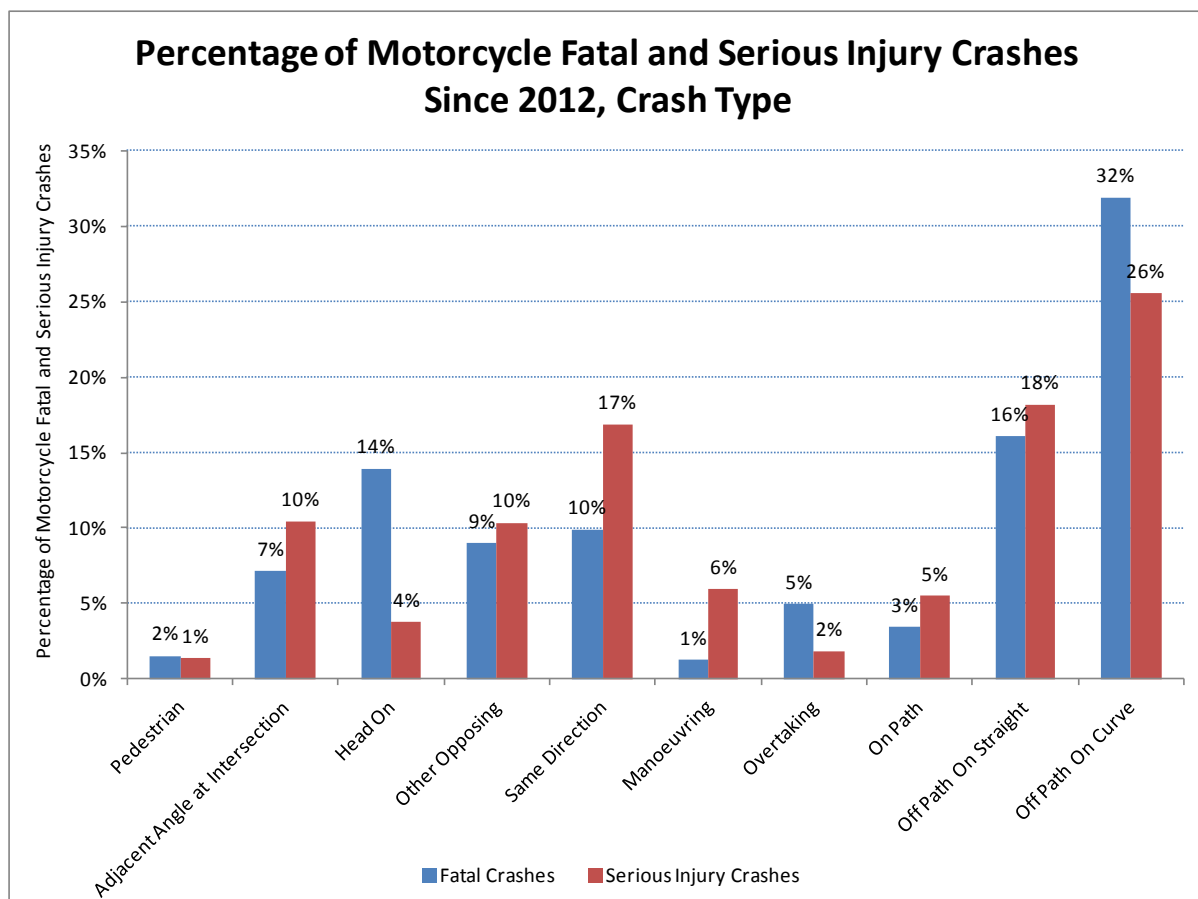
1.14 Motorcycle fatal and serious injury crashes since 2012, hour of day

The highest numbers of motorcycle fatal and serious injury crashes occur between 10 and 6pm.



1.15 Percentage of motorcycle fatal and serious injury crashes since 2012, crash type

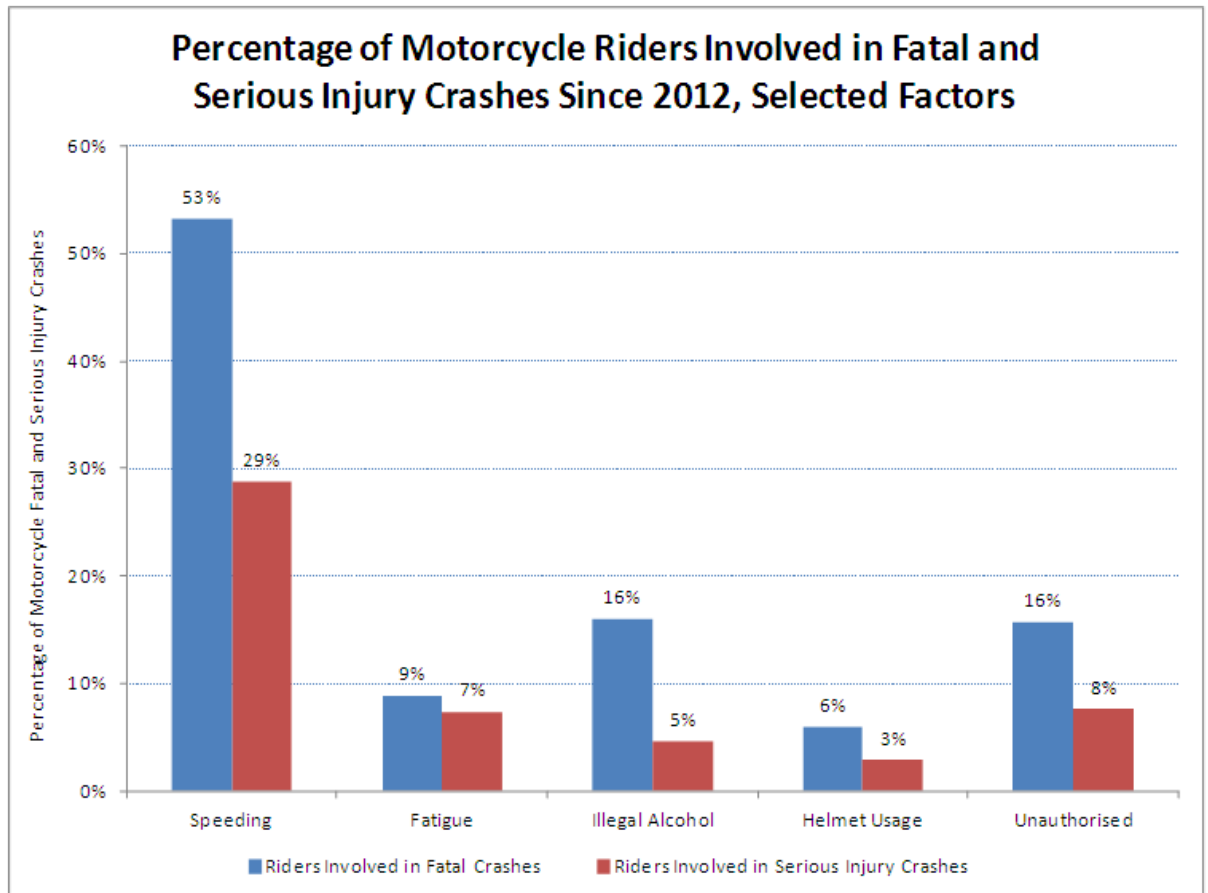
The crash types for fatal and serious injury motorcycle crashes do differ slightly. Since 2012 off road on curve, off road on straight and head on (not overtaking) crashes were the top three crash types for fatal motorcycle crashes whilst off road on curve, off road on straight and same direction crashes were the top three crash types for serious injury motorcycle crashes. Compared with fatal crashes, motorcycle serious injury crashes are over-represented in adjacent angle at intersection, same direction and manoeuvring crashes – these three crash types accounted for one-third of all motorcycle serious injury crashes.



1.16 Percentage of motorcycle riders involved in fatal and serious injury crashes since 2012, selected factors

There are relatively high levels of behaviour factors present for motorcycle riders involved in fatal and serious injury crashes, and these are generally more commonly involved in fatal crashes.

Of motorcycle riders involved in fatal crashes more than half (53 per cent) involved excessive or inappropriate speed, 16 per cent involved illegal alcohol and 16 per cent involved unlicensed riding. Note that the behaviour factors are not mutually exclusive. For example, a speeding rider with an illegal alcohol level would be counted as both a speeding rider and an illegal alcohol rider. Percentages for behaviour factors should therefore not be aggregated.



1.17 Additional general comments on motorcycle fatal and serious injury crashes by urbanisation

Other related crash data analyses have shown that there are marked differences in the characteristics of motorcycle fatal and serious injury crashes by urbanisation.

For motorcycle fatal and serious injury crashes in the Sydney, Newcastle and Wollongong Greater Conurbation

- More likely to be a serious injury crash
- More likely to occur during the week, particularly afternoon peak hours
- More likely to be an adjacent angle at intersection or same direction crash type
- For motorcycle fatal and serious injury crashes in the rest of NSW
- More likely to a fatal crash
- More likely to occur on weekends between 10am and 6pm
- More likely to involve a off road on straight, off road on curve or head on (not overtaking) crash type
- More likely to involve an older male rider
- More likely to occur on a curve
- More likely to involve excessive or inappropriate speed, illegal alcohol or unauthorised licence