Federal Office of Road Safety

ROAD RISK FOR SOBER, LICENSED MOTORCYCLISTS

This Monograph analyses the risk of death of sober, licensed riders involved in fatal road crashes and describes the circumstance of crashes involving these riders. The analysis is based upon the FORS Fatality File for 1988, 1990, 1992 and 1994, and the Australian Bureau of Statistics (ABS) Survey of Motor Vehicle Use for 1991 and 1995.

Riding a motorcycle is a relatively high risk activity in terms of the number of rider deaths or injuries per distance travelled. As noted in Monograph 17, motorcycle riders are 20 times more likely to be killed or seriously injured as a result of a road crash than the drivers of other types of vehicles.

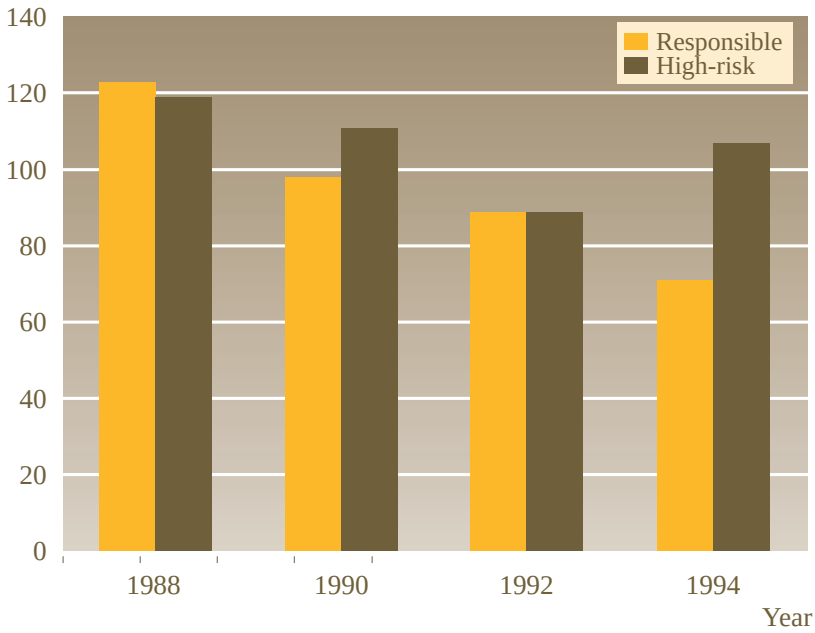
High risk activities such as drink riding or riding without a licence contribute substantially to the number of riders killed and have been the subject of previous research and analysis (eg Monographs 10 and 20). However, the great majority of motorcycle riders are licensed and observe the drink driving laws. The present report is concerned with this group of 'responsible' riders and the factors influencing their involvement in fatal crashes.

The approximate equivalence of 'sober and licensed' with 'responsible' is reinforced by the observation that less than 1% of responsible riders in the study were not wearing a helmet at the time of the crash compared with 21% of the drunk and/or unlicensed group (hereafter described as high risk riders).

Risk of motorcyclist death

In 1992 and 1994, a total of 353 motorcyclists were killed. Forty-seven percent of motorcycle riders had a blood alcohol content within the legal limit (for 23% of riders BAC was unknown) and 75% were licensed (for 6% of riders licence status was unknown). Thirty six percent of motorcycle riders were known to be both sober and licensed.

Figure 1: The number of responsible and high-risk motorcycle riders killed, 1988 to 1994



As noted above, risk is measured in terms of death or injury per distance travelled. The inclusion of high risk riders in the calculation certainly increases the number of deaths but has little effect on the total distance travelled. There are two reasons for this:

- Total distance travelled used in the risk calculation is derived from the ABS Survey of Motor Vehicle Use. This is a survey of registered owners and is highly unlikely to include the distance travelled by unlicensed drivers.
- Random Breath Tests results demonstrate that very few motorists drink drive/ride. Drink riding will account for a very small proportion of the total distance travelled by motorcycle riders (which again emphasises the very high risk associated with drink driving/riding).

Thus, responsible riders account for virtually all distance travelled as measured by the ABS survey.

To calculate an adjusted risk rate to reflect responsible riders, riders who were both sober and licensed were included and any rider who was either unlicensed or drunk was excluded from the analysis. Some riders (22%) could not be classified as responsible or not because relevant information was missing. These were treated on a pro-rata basis. Table 1 shows the adjusted and unadjusted risk rate for motorcycle riders.

Table 1: Fatality rates for motorcycle riders, 1992 and 1994

	Fatalities per 100 million km travelled
All motorcyclists	11.24
Responsible motorcyclists	5.25

The risk of fatality per distance travelled for responsible motorcycle riders was 53% lower than when the high-risk group was included. For every 100 million kilometres travelled, on average 5.25 responsible riders were killed. This rate is still high, reflecting the exposed position of motorcycle riders, but it also demonstrates to what extent a minority high risk group contributes to the overall calculation of risk.

As shown in Figure 1, the number of responsible motorcyclist deaths has decreased steadily since 1988. The number of high-risk rider deaths, however, has not changed a great deal. High-risk riders now comprise a greater proportion of all motorcycle fatalities.

Single vehicle crashes

In 1992 and 1994, a total of 24% of fatalities involving responsible motorcycle riders occurred as a result of single vehicle crashes (excluding those involving a pedestrian) and it was the motorcycle rider who was killed.

The average age of motorcycle riders (killed in single vehicle crashes) was 28.6 years. Forty-two percent of these riders were less than 25 years old. Sixty-eight percent were killed in rural areas. No single vehicle crashes occurred at an intersection, as shown in Table 2. Fifty-five percent of these motorcyclists ran off a bend in the road, 19% ran off a straight road, 10% hit an animal, 6% lost control while overtaking another vehicle and 10% of crashes occurred due to miscellaneous events.

More than one factor may be involved in any crash. In 87% of single vehicle crashes, the motorcycle rider contributed to the crash. In two thirds of these crashes the rider was performing a risky action at the time of the crash. In 59% of cases the rider was speeding excessively and in one third of crashes, the rider made an error. In 26% of cases, a contributing factor was that the motorcycle rider was a learner unable to cope.

Table 2: Percentage of motorcyclist fatalities by type of motorcycle crash and road features, 1992 and 1994

Road features	Single vehicle	Multiple vehicle
Straight road	42%	32%
Curved or near curve	58%	24%
X-intersection	0%	18%
Y-intersection	0%	1%
T-intersection	0%	25%

The typical responsible motorcycle rider killed in a single vehicle crash was a relatively inexperienced rider who lost control on a bend on a rural road, while riding too fast.

Multiple vehicle crashes

In 1992 and 1994, a total of 76% of fatalities involving responsible motorcycle riders occurred in multiple vehicle crashes.

The average age of these motorcycle riders was 29.6 years. Like the responsible motorcycle riders killed in single vehicle crashes, 42% of these motorcyclists were aged under 25.

Unlike single vehicle crashes, the majority of multiple vehicle crashes occur in urban areas. Sixty-two percent of responsible motorcyclists killed in multiple vehicle crashes were killed in urban areas. As shown in Table 2, 44% of multiple vehicle crashes occurred at intersections.

Forty-five percent of all crashes occurred when vehicles travelling in adjacent or opposite directions turned into the path of another vehicle. In three out of five of these cases, the driver turned across the path of the motorcycle rider. A further 24% involved a head-on collision and 10% occurred when the motorcyclist attempted to overtake another vehicle. Rear end collisions accounted for 13% of crashes with most of these due to the rider running into the rear of another vehicle. The remainder of crashes occurred due to miscellaneous events.

Around 41% of multiple vehicle crashes were the fault of the motorcycle rider and 42% were the fault of another road user. In 12% of cases, both road users were at fault.

- In multiple vehicle crashes where the motorcyclist was judged to be at fault, excess speed was a factor in nearly half of the cases. Drugs were a contributing factor in one in eight cases.
- Where the driver was at fault, the driver did not see the motorcyclist or misjudged the distance between their vehicle and the motorcycle in 55% of cases. In half of these crashes the driver made a right hand turn in front of the motorcyclist.
- In cases where both the motorcyclist and the other driver were at fault, the main contributing factors were a mixture of the motorcyclist's excessive speed and the driver failing to see the motorcyclist or misjudging the distance.