IAM
DRIVING ROAD SAFETY

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IAM Motorcycling Facts

Foreword

Motorcycling can be the riskiest way to travel. For every kilometre travelled, a motorcyclist is fifty times more likely to become a casualty than a car driver.

This latest IAM study reviews and reappraises the risk. It analyses 150,000 motorcycle casualties over seven years, highlights where and when motorcyclists are most at risk and explains why they become casualties. Bike size, road layout, junctions and bends, weather, time of day and seasons are some of the contributory factors. But most significant are the age of the rider and inexperience. Fewer than 20 per cent of motorcyclists are under 30 but they represent half of all rider casualties. As many people take the motorcycle test after they are 30, the casualty figures include inexperienced riders in their 30s and 40s.

The motorcycle and driving tests examine basic competencies. Motorcyclists and drivers then tend to develop their skills the hard way – on their own – and all too often suffer a crash along the way. For a car driver, a minor collision may cause no injury but on a bike it can result in serious injury or death. This is why riders are so much more at risk, and why motorcycling can be the most dangerous way to travel.

Is this vastly greater risk reducible? Yes. A key solution lies in extra training and advanced riding qualifications. Learning from experienced motorcyclists how to ride with greater precision, awareness and anticipation is the best way to develop the extra skills and the right attitude to be a safer rider, and not a casualty statistic.

Safe riders are made, not born. Organisations like the IAM exist to turn inexperienced and vulnerable motorcyclists into skilled and thinking riders who can safely enjoy the freedom and sheer pleasure of life on two wheels.

Alistair Cheyne OBE
Chairman
IAM

Colin Skeen
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IAM Motoring Trust

Contents

Summary

In the seven years between 2000 and 2006, around 150,000 motorcyclists were killed or injured on Britain's roads. This report highlights key findings from the analysis of the information gathered by the police at the crash scene and recorded in the official statistics.

Where and when riders are killed or seriously injured (KSI)

Urban/rural roads
- More than twice as many riders are killed on rural roads than on urban roads

Road class
- Most crashes are on single-carriageway A roads, and on minor roads (C and unclassified)

Junctions
- Three quarters of crashes on urban roads are at or near to a junction compared with just under half on rural roads
- Other road users are at fault in a majority of right-of-way violation crashes

Bends
- A third of crashes on rural roads are on a bend (marginally more on left hand bends) compared with less than ten per cent on urban roads

Other vehicles involved
- Three quarters are in collisions with one or more vehicles

Daylight/dark
- A quarter occur during darkness, mostly on roads lit by streetlights

Days of the week
- Motorcyclist casualties rise significantly on Saturdays and Sundays, whereas there are more motorcycle trips on weekdays than at weekends

Seasons
- KSI casualties broadly reflect bike traffic, ie peak riding and casualties in the summer and least during winter
- The summer casualty peak is most marked in the 25–59 age group
- Autumn is the KSI peak for riders under 20

Weather and road surface
- More than three quarters of KSI casualties happen in fine weather when the road surface is dry
- Larger proportions of rider KSI casualties on smaller bikes (51-125cc) occur in the rain and in dry weather when the road is wet or damp

Skidding
- One third of crashes involve the rider skidding, which features in more of the motorcycle only crashes than those involving other vehicles

Leaving the road
- More than a quarter of KSI casualties are on bikes that leave the road during the crash

Hitting roadside objects
- Half of all riders killed are on bikes that leave the carriageway; a third of them hit a roadside object, such as a crash barrier, road sign or tree

Defective roads
- Local road surface conditions/defects contribute to only a small proportion of KSI casualties

Motorcycles and motorcyclists

Bikes and tests
- There are more than one million motorcycles over 50cc currently registered
- Between 50,000 and 60,000 motorcycle tests are passed annually; more than half of test candidates are over 30 years old

Rider casualties
- The annual averages of motorcyclists killed or seriously injured (KSI) between 2000 and 2006 are:
  - 5,200 in England, 240 in Wales and 370 in Scotland
  - They are mostly male because most riders are men

Risk
- Motorcyclists are about 50 times more likely to become a KSI casualty than car drivers
- Twice as many male riders in their teens and twenties are killed in motorcycle crashes than die as a result of a physical assault

Big bikes
- Three quarters of all motorcyclists killed are riding the biggest bikes (over 500cc) but they represent only half of all licensed motorcyclists

Pillion passengers
- 6 per cent of casualties are pillion passengers, mainly on motorcycles over 125cc
- Motorcyclists on these bikes under 20 years of age have the largest number of injury crashes in which a pillion passenger is injured, nearly half of those motorcyclists are under 18 – and likely to be riding illegally

Young riders
- Fewer than 10 per cent of motorcyclists are aged 16 to 19 but they represent more than 25 per cent of rider casualties
- Just 5 per cent of motorcyclists are aged 20 to 24 but they represent 13 per cent of rider casualties

Older riders
- As riders get older, more become KSI casualties in daylight
- Nine in 10 riders over the age of 30 who are killed while riding are on bikes over 500cc

Riding purpose
- 'Social' evening riding among younger riders may explain why a larger proportion under 25 become KSI casualties after 7pm

KSI = Killed or seriously injured

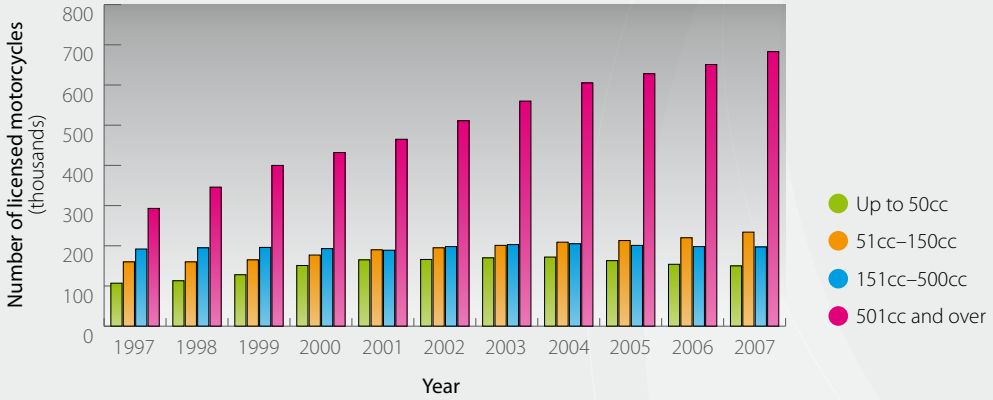
Part 1: Motorcycles and motorcyclists

The peak year for motorcycling was 1960 when there were 1.5 million bikes on the roads. By 1995, numbers had fallen to 0.6 million but since then bike numbers have risen to 1.1 million. Much of the growth has been due to sales of bikes over 500cc and the popularity of recreational riding.

Motorcycles

- There are more than one million motorcycles over 50cc and 150,000 mopeds under 50cc
- Over the last 10 years:
  - The number of motorcycles over 500cc has doubled
  - The number of mopeds has grown by half
  - The number of bikes between 51cc and 500cc has remained relatively unchanged

Number of motorcycles, Great Britain 1996-2007 (thousands)



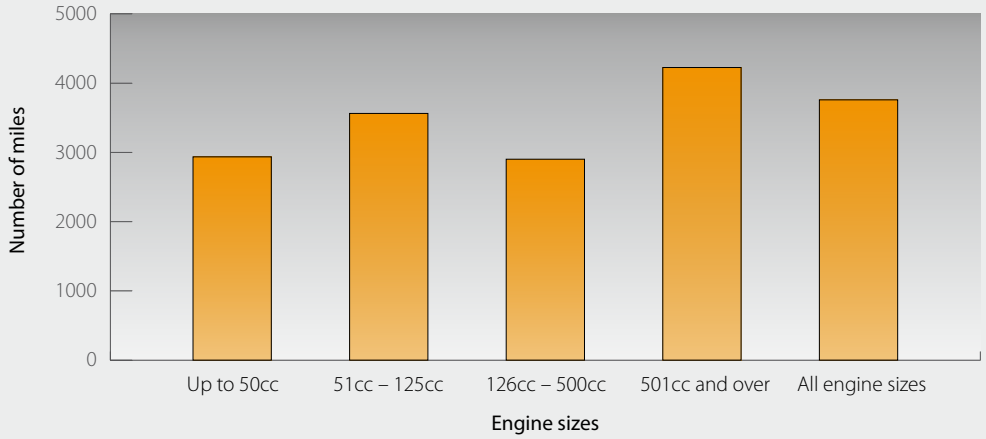
*Note: The figures are the number of licensed motorcycles at the end of the year, and do not include motorcycles licensed only in the summer months (60,000 currently)

Source: DfT 2008a

Motorcyclists

- Almost 3 per cent of households own a motorcycle
- Motorcycle ownership is more common in car-owning households (3 per cent) than in non car-owning households (1 per cent)
- The highest average annual mileage (4,200 miles) is ridden on bikes over 500cc; the lowest (2,900 miles) is ridden on bikes between 126cc and 500cc

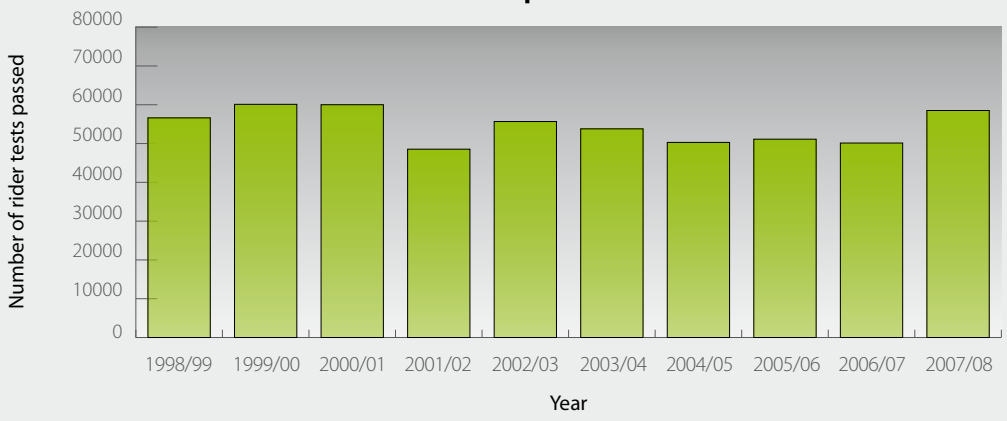
Average annual mileage



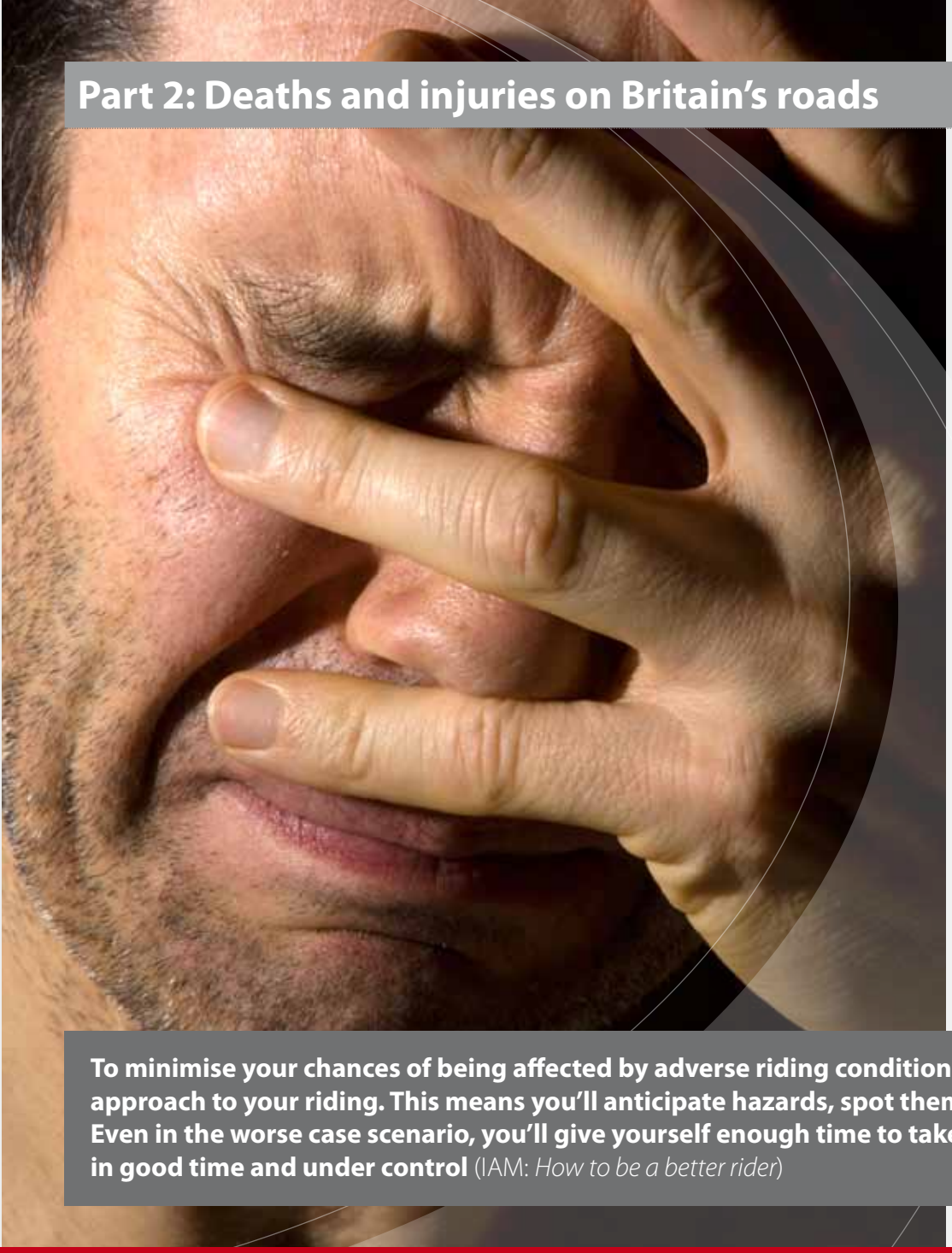
Licensed motorcyclists

- Between 50,000 and 60,000 riders have passed the motorcycle test each year over the past 10 years

Rider tests passed 1998–2008



Source: DfT 2008a



Part 2: Deaths and injuries on Britain's roads

When a road crash results in death or injury, the police record the location, injuries, vehicle manoeuvres, weather and road conditions, type of road, speed limit, date, time and other details to help to identify factors associated with the crash. Seven years of this data between 2000 and 2006 inclusive have been analysed. They are summarised here showing where, when and how motorcyclists are killed or injured.

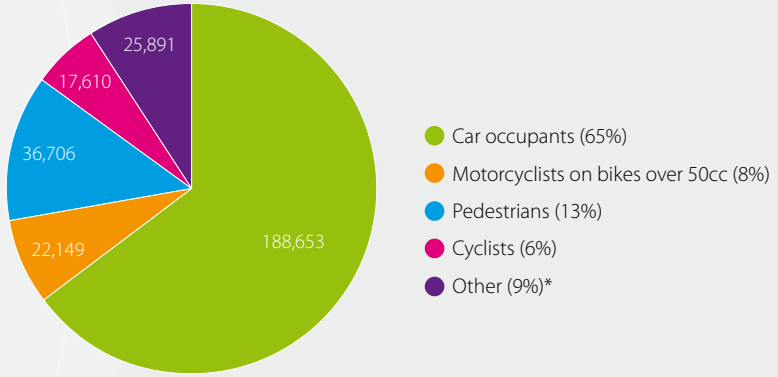
All casualties

Numbers

More than two million people were killed or injured on Britain's roads between 2000 and 2006 inclusive – an average of 291,000 a year. One in 13 were motorcyclists, who represent:

- 18 per cent of all fatalities – 601 a year
- 19 per cent of all seriously injured – 6,350 a year
- 8 per cent of all slightly injured – 19,300 a year

Annual deaths and injuries



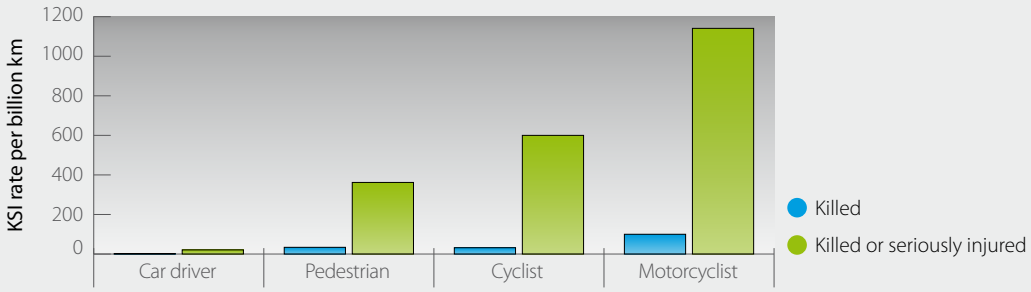
*Including moped riders

To minimise your chances of being affected by adverse riding conditions, or other peoples' mistakes, you need to take a planned and systematic approach to your riding. This means you'll anticipate hazards, spot them earlier and allow enough time and space to avoid them altogether. Even in the worse case scenario, you'll give yourself enough time to take evasive action. Thinking ahead means that every manoeuvre is made in good time and under control (IAM: *How to be a better rider*)

Risk

- The risk of motorcyclists being killed or seriously injured (KSI) is about 50 times greater than for car drivers:
  - 21 car drivers are KSI casualties for every billion km driven
  - 1,100 motorcyclists are KSI casualties for every billion km ridden
- Twice as many male riders in their teens and twenties are killed in motorcycle crashes than die as a result of a physical assault

Risk of being killed or seriously injured (KSI)

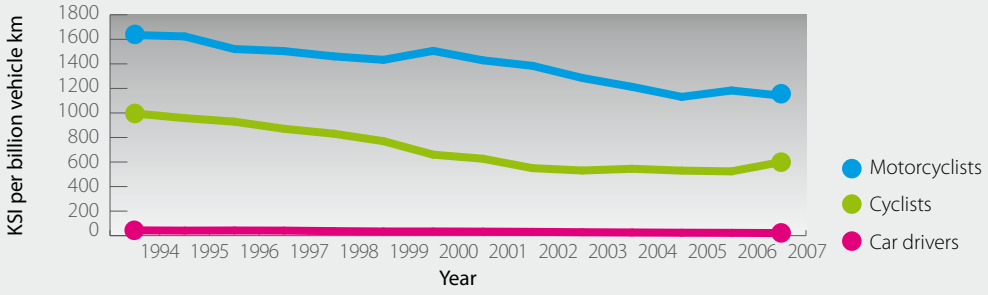


Source: DfT 2008a

Changes over 15 years

- During the 1980s and early 1990s, motorcycle casualty numbers fell dramatically
- In the late 1990s, the numbers grew with the increase in motorcycle traffic, but have been falling more recently while motorcycle traffic has continued to grow
- The casualty rate (ie casualties per km ridden), however, has fallen by 32 per cent between the mid 1990s and 2007

Motorcyclist KSI rate

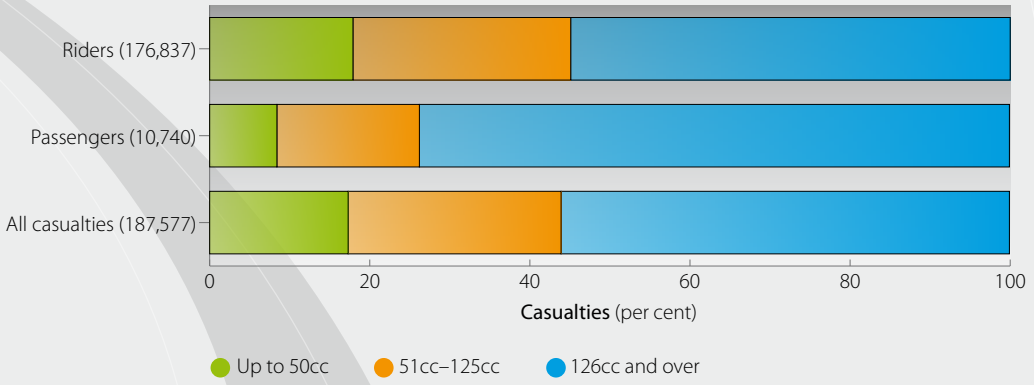


Source: DfT 2008b

Engine size

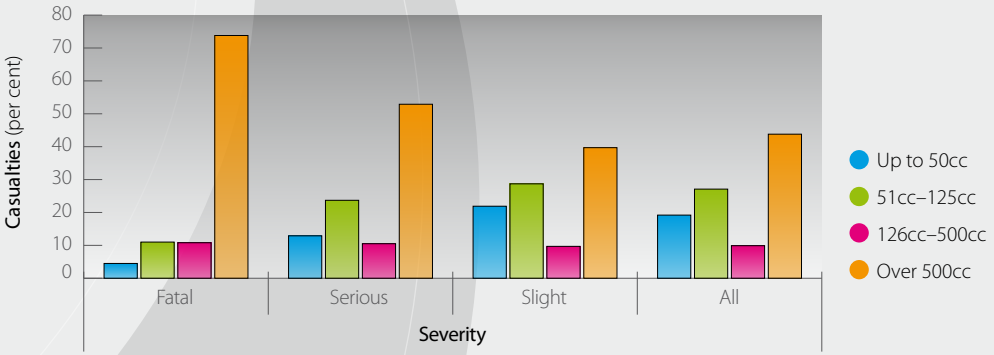
- Just over half of casualties are riding bikes with an engine over 125cc
- Three quarters of pillion passenger casualties are on bikes over 125cc, which are more suited to carrying a passenger

Motorcyclist casualties 2000–2006, engine size (per cent)



- Bikes over 500cc represent half of all motorcycles but are ridden by three quarters of riders killed
- 78 per cent of all men killed on motorcycles are riding bikes of more than 500cc; this rises to almost 90 per cent of men over the age of 30

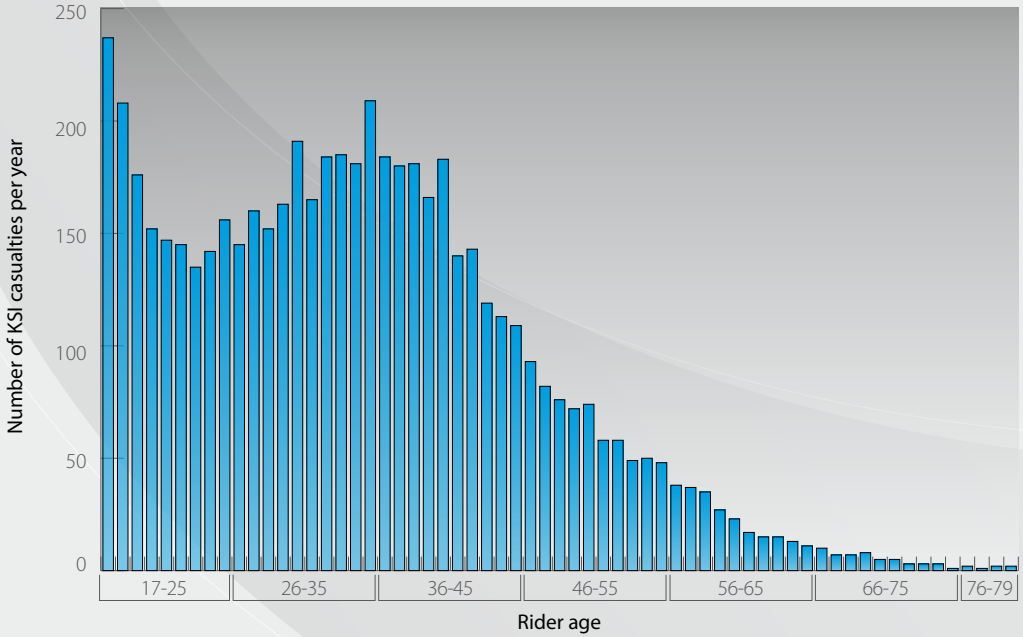
Rider casualties 2005 – 2006, engine size (per cent)



Ages of motorcyclist casualties

- The highest number of deaths and serious injuries is among motorcyclists aged 17 and 18
- There is another peak in KSI casualties between the ages of 30 and 40
- Numbers decline after the age of 40, with few rider KSI casualties over the age of 60

Motorcyclists killed or seriously injured (KSI)



Pillion passenger casualties

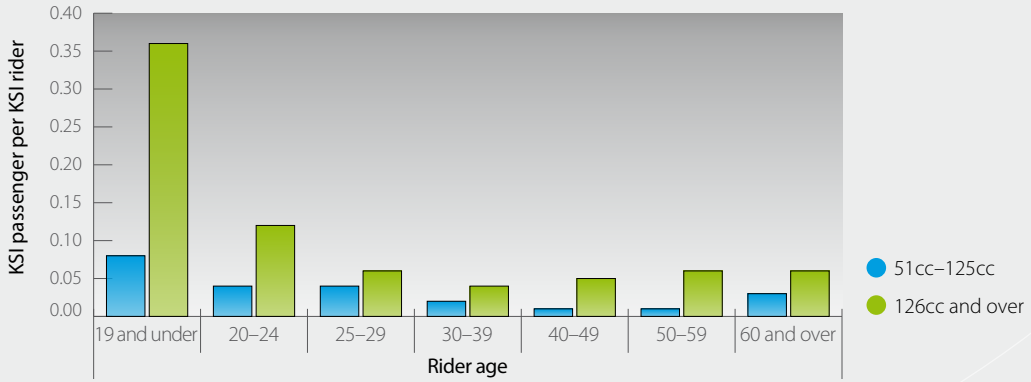
Numbers

- Pillion passengers are 6 per cent of motorcycle KSI casualties

Rider age/engine size

- There are more passenger casualties on bikes over 125cc than on smaller ones
- Riders under 20 on these bikes have the largest number of pillion KSI casualties and nearly half are recorded as under the age of 18 (and are likely to be riding illegally)

Passenger KSI casualties



Note: Dividing the number of KSI pillion passengers by the number of KSI riders produced the above graph

Country differences

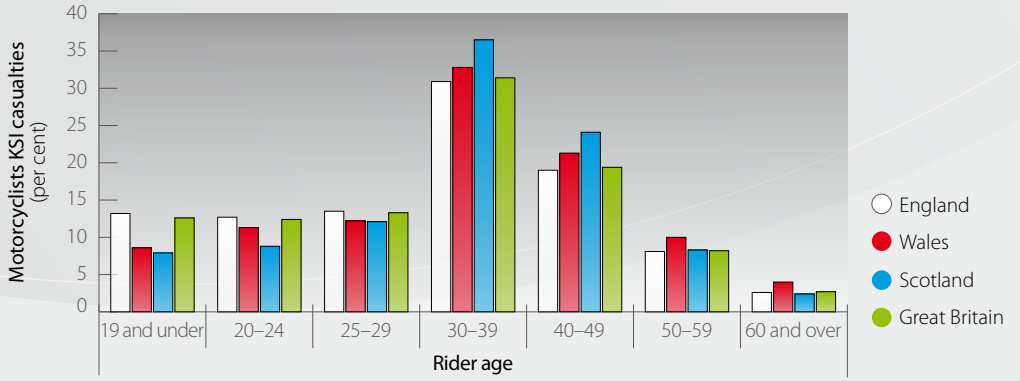
Numbers

- Between 2000 and 2006 inclusive, more than 40,000 motorcyclists were killed or seriously injured (KSI), an average of around 5,800 each year; 5,200 in England, 240 in Wales, 370 in Scotland

Rider age

- Between the ages of 30 and 50, a marginally greater proportion of riders are KSI casualties in Wales and Scotland than in England, possibly because the rural nature of those countries attracts recreational riders

Motorcycle KSI casualties in England, Scotland and Wales



Part 3: Age – gender – experience

Fewer than one fifth of riders are under 30, but they represent half of all casualties. Inexperienced riders are spread across all age groups, eg more than half of riders take the test after they are 30 years old – the age by which more than 80 per cent of people have passed the car driving test. Motorcycling is dominated by males, which is why most of the casualties are men.

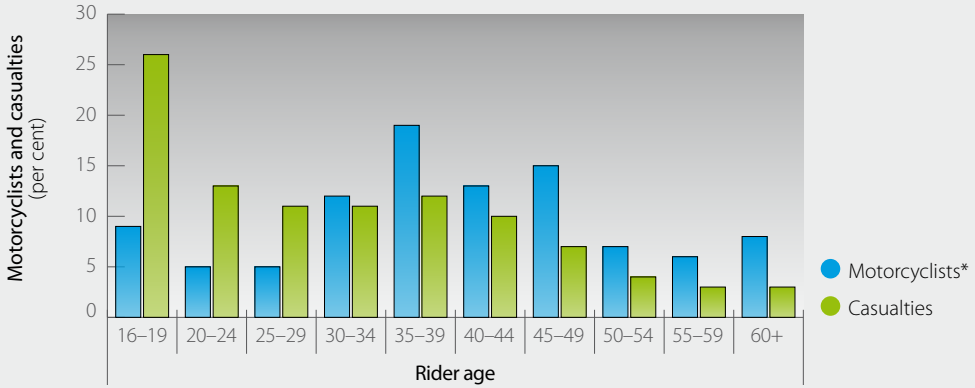
Age and gender

- Nine in 10 motorcyclist KSI casualties are men due mainly to the very high proportion of male riders

Age and experience

- Motorcyclists aged 16 to 19 are less than 10 per cent of riders but represent more than 25 per cent of rider casualties
- On the other hand, motorcyclists aged 35 to 39 are 19 per cent of riders but just 12 per cent of casualties
- The number of crashes a rider has is proportional to mileage ridden, but studies show that the number falls with age and increased riding experience
- Just 5 per cent of motorcyclists are aged 20 to 24 but represent 13 per cent of rider casualties

Rider casualties and motorcyclists



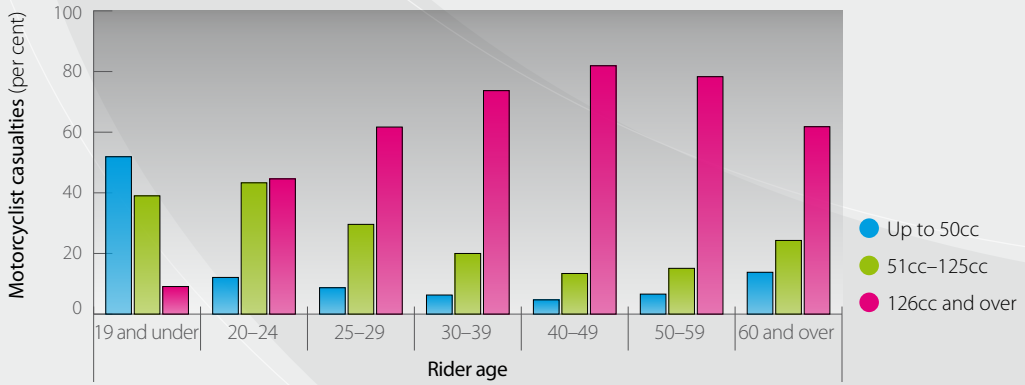
*Mopeds and motorcycles

Data for motorcyclists and casualties is 2004-2005 (DfT)

Age, experience and bike size

- Taking into account distance ridden, age and experience, riders on smaller bikes (51cc–125cc) have higher rates of crashes than riders of larger bikes
- Most rider casualties under 20 are on mopeds or bikes up to 125cc; there are few moped casualties aged over 20, reflecting the progression of younger riders to riding motorcycles or driving cars
- The proportion of casualties on bikes over 125cc increases up to the 40–49 age group, then decreases among older riders

Motorcyclist casualty ages and bike engine size (per cent)



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Part 4: Where and when motorcyclists* are killed or seriously injured (KSI)

Road layout, speed, daylight or darkness, wet or dry are among many features recorded by the police at a crash scene. Analysing these details helps to draw a picture showing where and when riders are most at risk, and helps explain why.

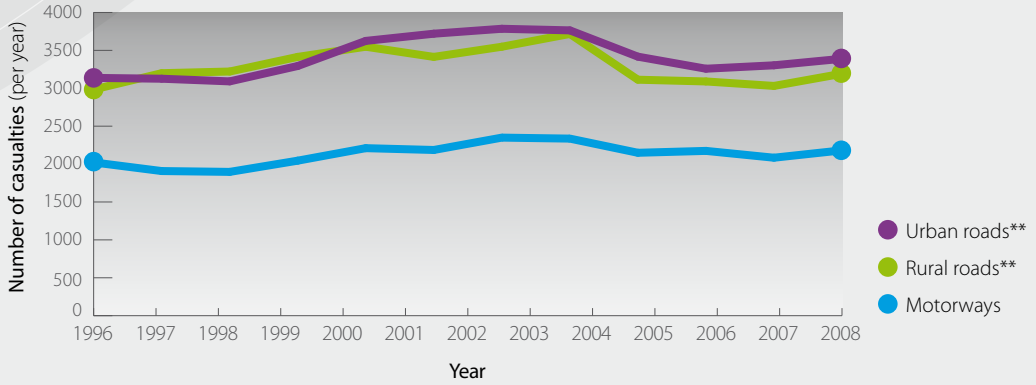
Urban and rural roads

Numbers

- More than twice as many riders are killed on rural roads than on urban roads
- The numbers of seriously injured are almost equal on urban and rural roads
- KSI casualties on both urban and rural roads increased during the 1990s; they peaked in 2003 and have fallen since (with a marginal increase in 2007)

* As it is the characteristics and circumstances of the rider in a crash that are relevant, pillion passenger casualties are not included in the following summary

Motorcycle KSI casualties



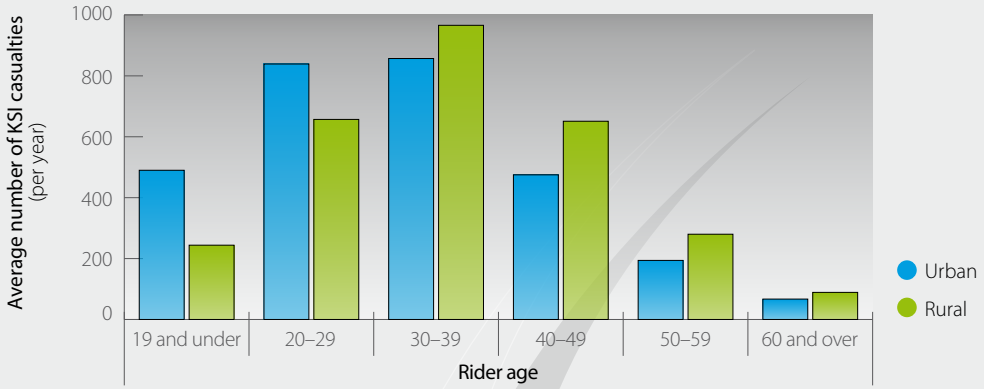
**Excluding motorways

Source: DfT 2008a

Rider age

- Up to the age of 30, more riders become KSI casualties on urban roads
- Over the age of 30, there are more KSI casualties on rural roads because older riders are more likely to be using their bikes for recreational riding

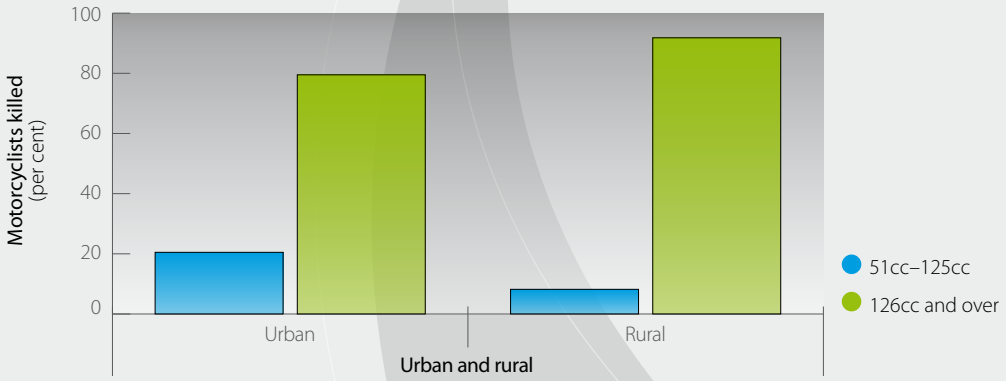
Ages of KSI casualties on urban and rural roads



Engine size

- Nine in 10 rider fatalities on rural roads are on bikes over 125cc, compared with eight in 10 on urban roads – reflecting the fact that larger bikes cover more mileage on rural roads
- In 2005–2006, 81 per cent of riders killed on rural roads and 68 per cent killed on urban roads were riding bikes over 500cc

Motorcyclists killed on urban and rural roads, engine size (per cent)



Safest and least safe roads

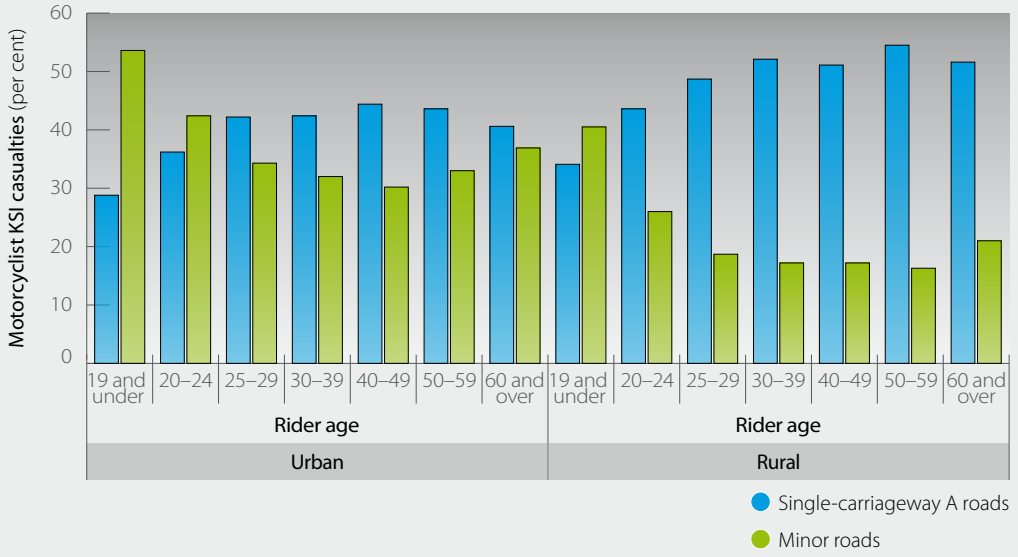
Numbers

- Most rider KSI casualties are on single-carriageway A roads and on minor roads (C and unclassified)
- Urban roads – 40 per cent are on single-carriageway A roads; almost as many are on minor roads
- Rural roads – half are on single-carriageway A roads; 20 per cent on minor roads
- Motorways – only 4 per cent of rider KSIs occur on motorways (compared with 8 per cent of car drivers)

Rider age

- A larger proportion of under 25 riders than older riders are KSI casualties on minor roads; in rural areas a larger proportion of KSI casualties among riders over 25 occur on rural single-carriageway A roads than among younger riders

KSI casualties on single-carriageway A and minor roads (per cent)

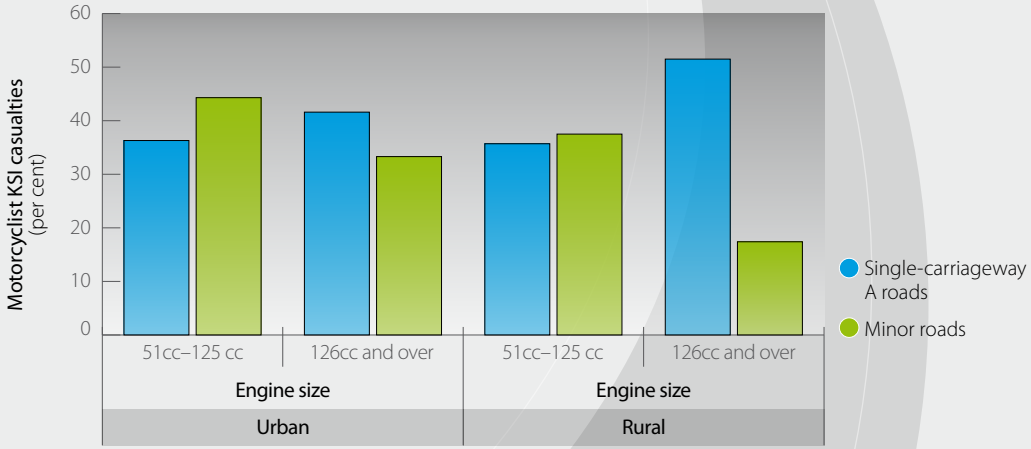


Because of the relatively low speeds in town, positioning for vision in order to maximise the distance in which you can see becomes less vital. Avoiding danger is the most important thing.
(IAM: *How to be a better rider*)

Engine size

- On rural roads, half of KSI casualties riding bikes over 125cc are on single-carriageway A roads and less than a fifth of them are on minor roads

KSI casualties and engine size



Speed limits

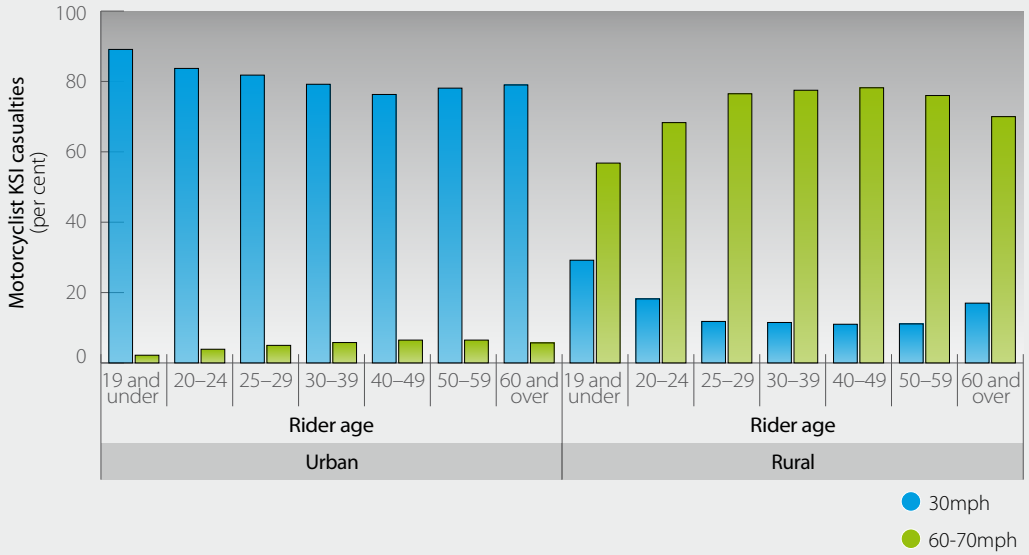
Numbers

- Three quarters of rider KSI casualties in rural areas are on 60mph or 70mph roads
- In urban areas, more than three quarters are on 30mph roads

Rider age

- Urban roads – a marginally larger proportion of KSI rider casualties under 20 are on 30mph roads than older riders
- Rural roads – a larger proportion of riders over 20 are KSI casualties on 60mph or 70mph roads than riders under 20

KSI casualties on 30mph and 60mph–70mph roads (per cent)



Engine size

- Urban roads – 88 per cent of rider KSI casualties on bikes under 125cc are on roads with a speed limit of 30mph and under, compared with 78 per cent for bikes over 125cc
- Rural roads – 78 per cent of KSI casualties riding bikes over 125cc, and 55 per cent of those riding smaller bikes, are on roads with a speed limit of 60mph or 70mph

Junctions

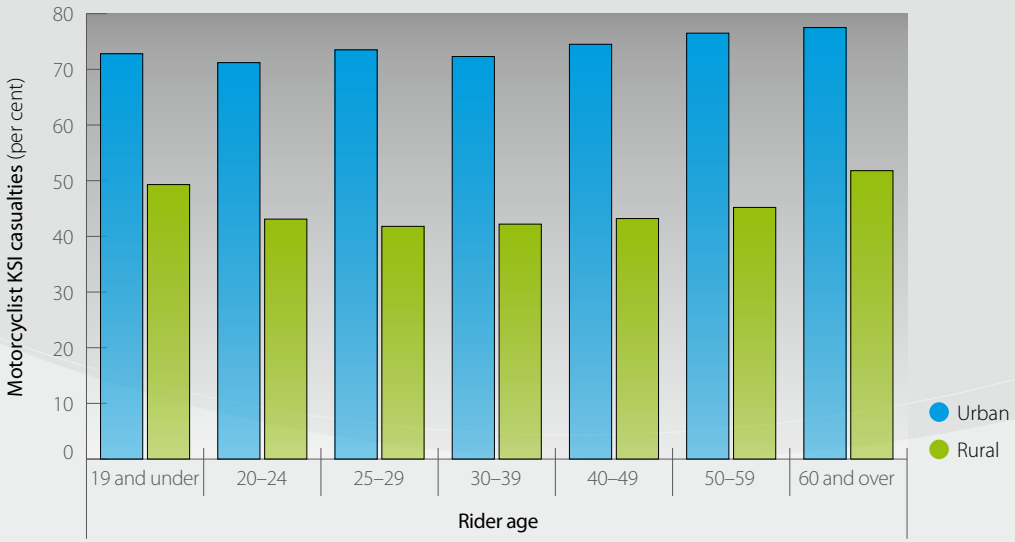
Numbers

- Urban roads – three quarters of rider KSI casualties are in crashes at or near a junction
- Rural roads – just under half are also at or near a junction
- By failing to notice approaching motorcycles, other road users are at fault in a majority of right-of-way violation crashes involving motorcycles

Rider age

- Differences between age groups in KSI injury crashes at junctions are small but:
  - Rural roads – a larger proportion of riders under 20 or over 60 are in junction crashes
  - Urban roads – a larger proportion of riders over 50 are in junction crashes

KSI casualties at junctions (per cent)



Engine size

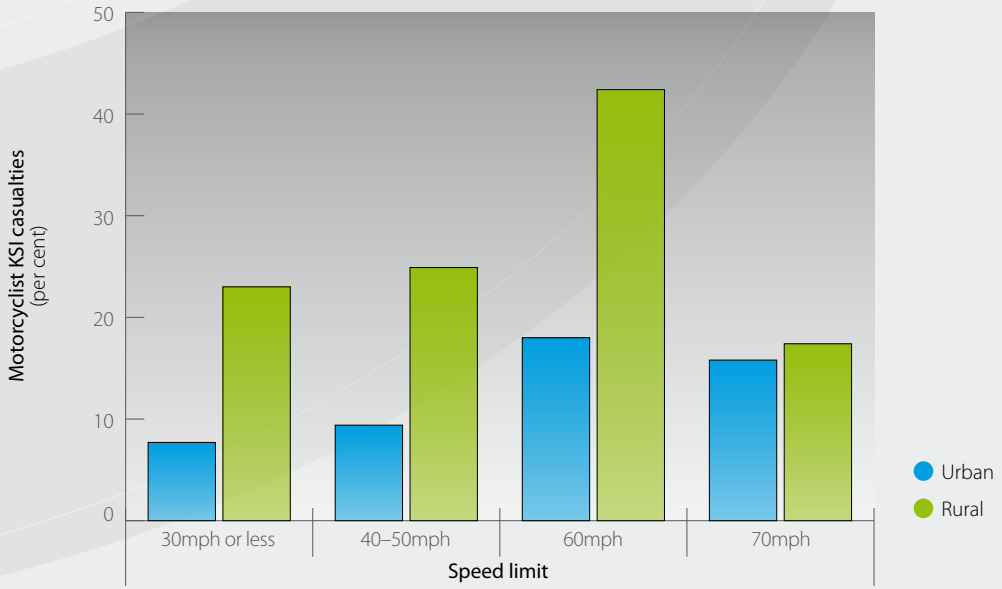
- On rural roads, a marginally greater proportion of riders on bikes under 125cc are KSI casualties at or near a junction than those on bigger bikes

Bends

Numbers

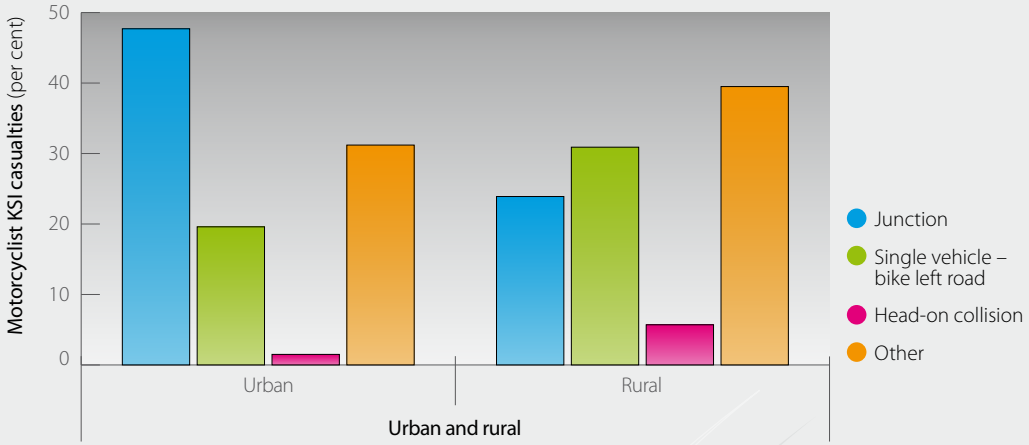
- The largest proportion of motorcyclist KSI casualties are on bends on 60mph roads
- Urban roads – only 8 per cent are on a bend, of which half are at or near a junction
- Rural roads – a third are on a bend (marginally more on left hand bends), and a third of these result in the bike leaving the road with no other vehicle involved

KSI casualties on bends (per cent)



If riding on the main road, remember, irrespective of the right of way, a rider is likely to be the one to suffer most in any collision. Pay attention to other road users and always expect the worst from them (IAM: *How to be a better rider*)

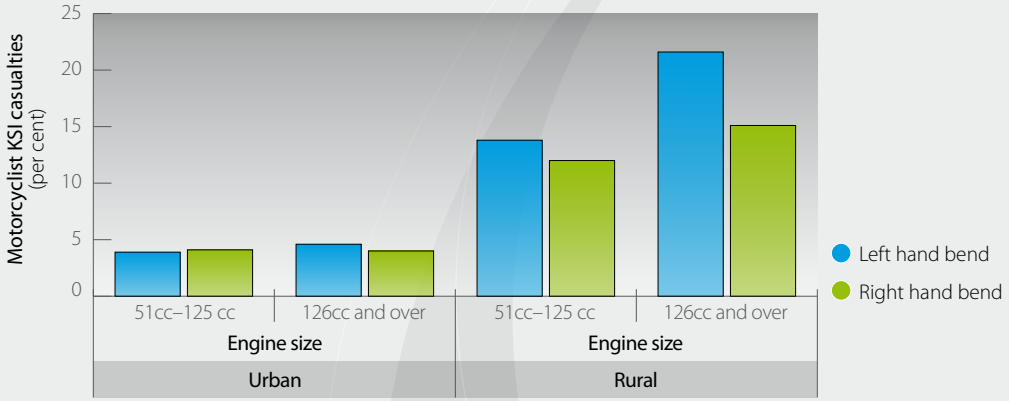
KSI casualties on bends (per cent)



Engine size

- Rural roads – a third of rider KSI casualties on bikes over 125cc are on bends, compared with a quarter riding smaller bikes
- Urban roads – there is little difference in casualties on smaller and larger bikes

KSI casualties on bends (per cent)



Rider age

- On rural roads a slightly larger proportion of rider KSI casualties occur on a bend in the 25–39 age group than among younger or older casualties

Overtaking

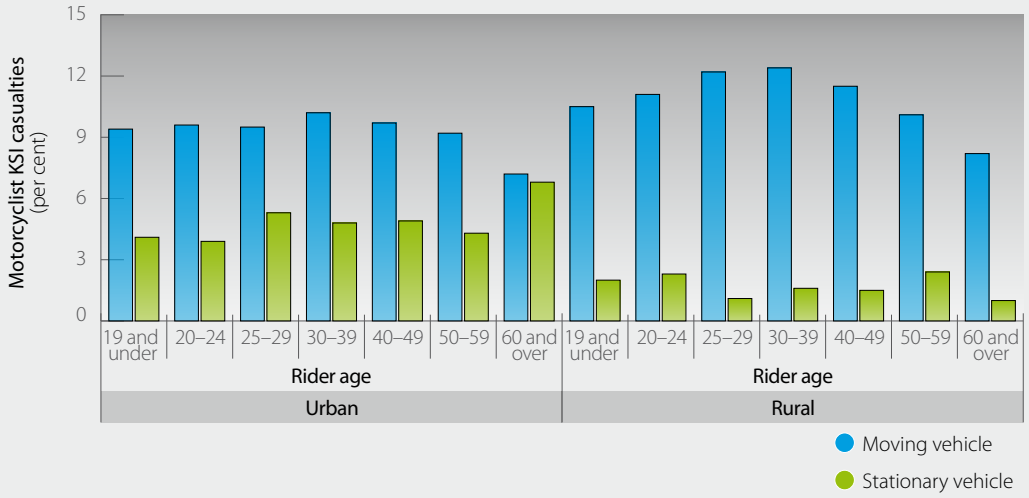
Numbers

- Urban roads – 10 per cent of rider KSI casualties occur when the rider is overtaking a moving vehicle on the offside; 5 per cent are overtaking a stationary vehicle
- Rural roads – 12 per cent are overtaking a moving vehicle

Rider age

- A slightly larger proportion of riders in the 25 to 39 age group are KSI casualties in overtaking crashes on rural roads than among younger or older casualties

KSI casualties overtaking (per cent)



Engine size

- In rural areas, more rider KSI casualties (12 per cent) on bikes over 125cc are overtaking a moving vehicle on the offside than riders on smaller bikes (8 per cent)

A rider has many advantages over a driver when it comes to overtaking: improved view, good power-to-weight ratio and an overall smaller size. As a result, a well timed, well executed overtake is both satisfying and safe (IAM: *How to be a better rider*)

Single and multiple vehicle crashes

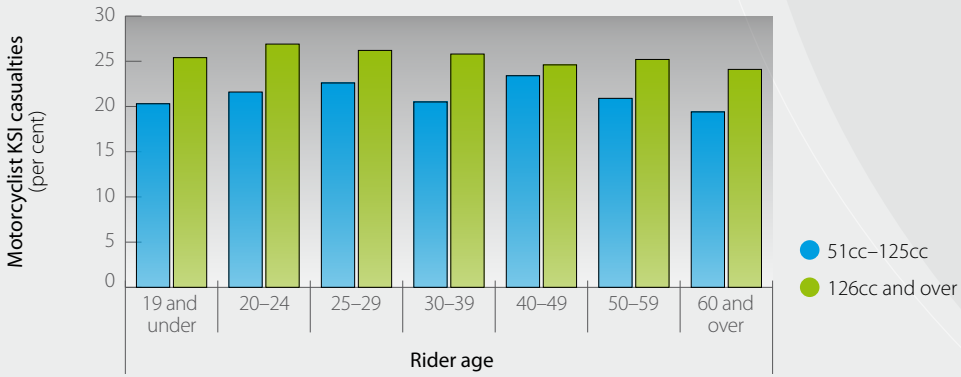
Numbers

- Three quarters of all rider KSI casualties result from collisions with one or more vehicles

Rider age

- These proportions vary little across all age groups

KSI casualties in single vehicle collisions (per cent)



Engine size

- A quarter of riders on larger bikes over 125cc are KSI casualties in crashes where no other vehicle is involved compared with a fifth on smaller bikes

Overall stopping distance (thinking distance + braking distance)

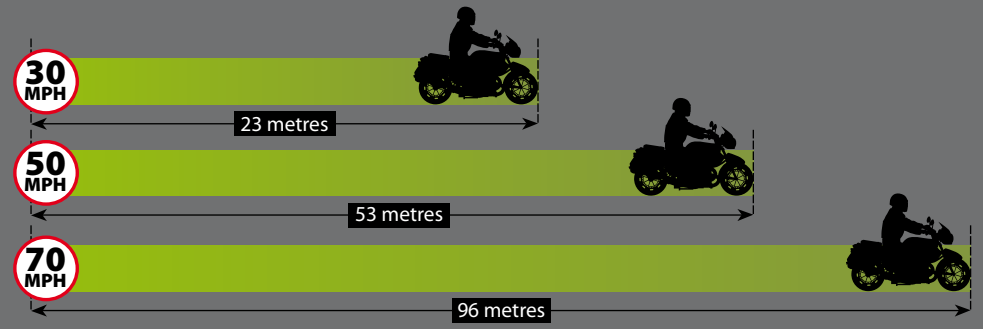


Diagram reproduced from How to be a better rider: The essential guide (IAM)

Day and night

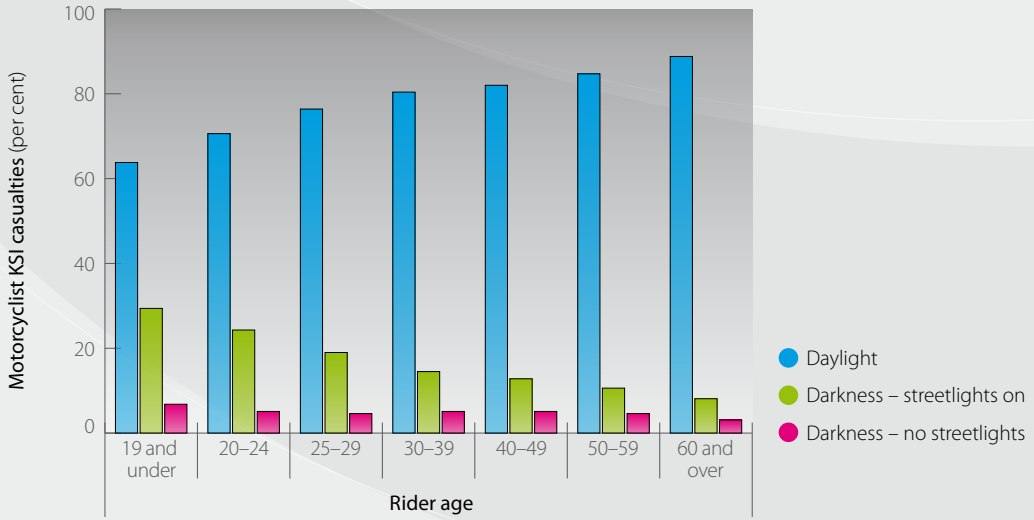
Numbers

- Most rider KSI casualties occur in crashes in daylight
- A quarter are in crashes during darkness hours, mostly on roads lit by streetlights
- Just 5 per cent of KSI casualties are on unlit roads in the dark but 9 per cent of all rider deaths occur on these roads

Rider age

- As riders get older, more of their KSI crashes happen in daylight hours
- It is likely that older riders use their bikes less in the dark than younger riders (owing to different patterns of travel)

KSI casualties during darkness and daylight (per cent)



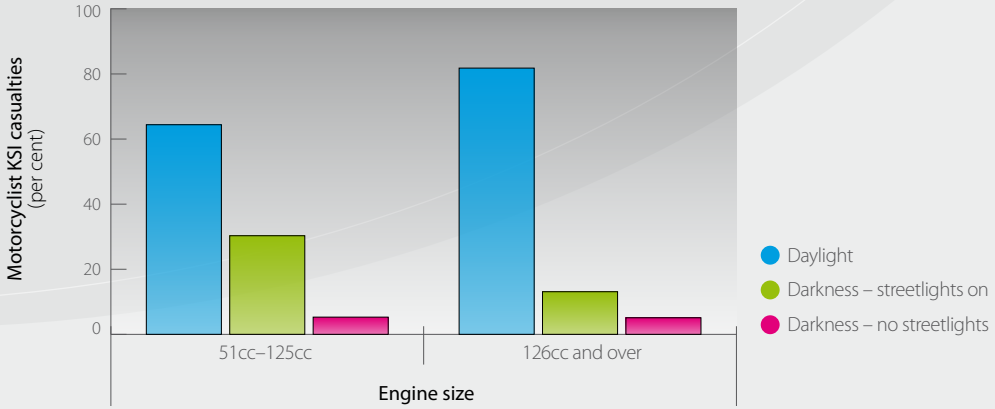
If your headlight illuminates 40 metres ahead, you'll have just 1.5 seconds to react and stop at 60mph. Realistically, you'll be travelling at 40mph when you hit the obstruction (IAM: *How to be a better rider*)

IAM DRIVING ROAD SAFETY

Engine size

- A larger proportion of riders on smaller bikes (under 125cc) become KSI casualties in the hours of darkness
- This may reflect differences in patterns of use between riders of smaller and bigger bikes

KSI casualties in darkness and daylight (per cent)

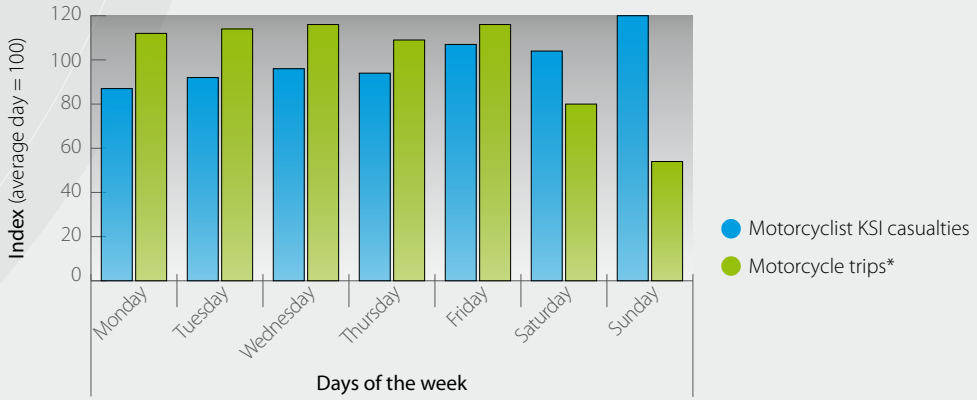


Days of the week

Numbers

- There are more casualties than average on weekend days than on weekdays
- Although the average number of motorcycle trips is higher on weekdays, weekend trips are more likely to be longer distance.
- Leisure trips are on average twice as long as others and represent a quarter of all mileage; work, business and education account for two thirds of trips and half of all mileage

KSI casualties and motorcycle trips



Source: DfT 2008.

*2004 - 2006

Rider age

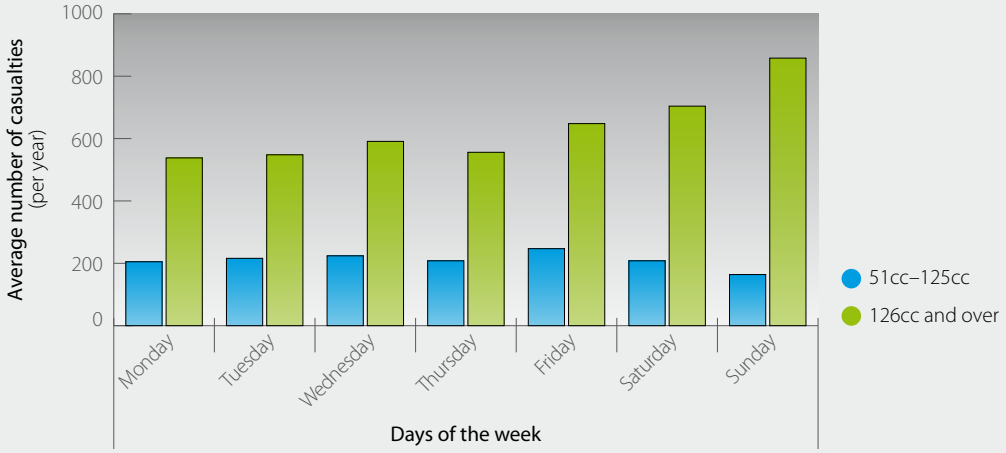
- For those 25 and over, the greatest proportion of rider KSI crashes happen on Sundays between 7am and 7pm, reflecting the amount of recreational riding at weekends and particularly on Sundays

If a rider is forced in an emergency to swerve, it is essential to know through practice how to achieve positive steering. Accidents often result when otherwise experienced riders who have never developed this skill encounter an unexpected obstacle and don't instinctively know how to react to it (IAM: *How to be a better rider*)

Engine size

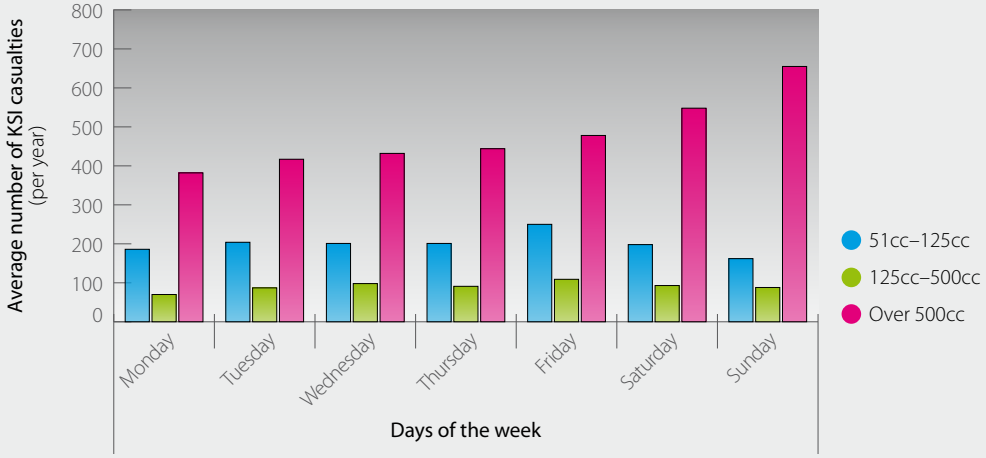
- The numbers of rider KSI casualties on smaller bikes (under125cc) are about the same on all days of the week, whereas casualty numbers on larger bikes increase significantly on Fridays, Saturdays and Sundays – probably owing to recreational weekend riding

KSI casualties, days of the week and engine size (average per year)



- The dominant feature of Saturday and Sunday KSI casualties is the number of riders of bikes over 500cc

KSI casualties, days of week and engine size (average per year)

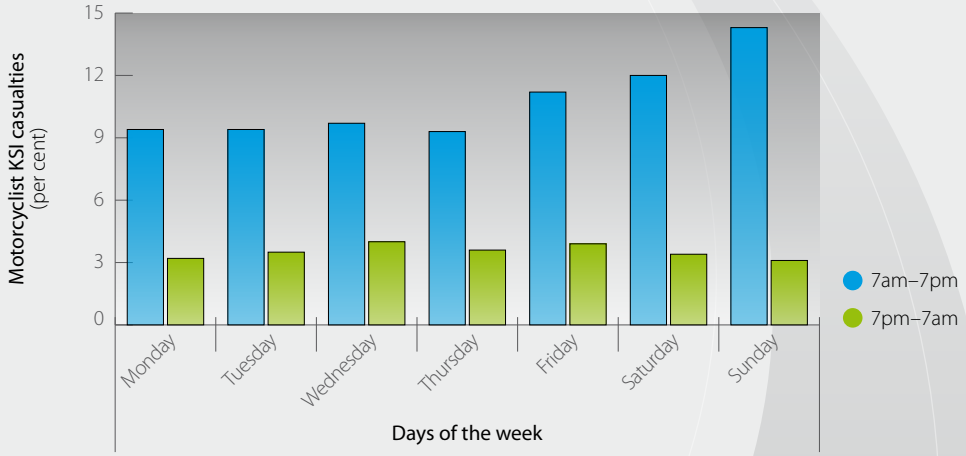


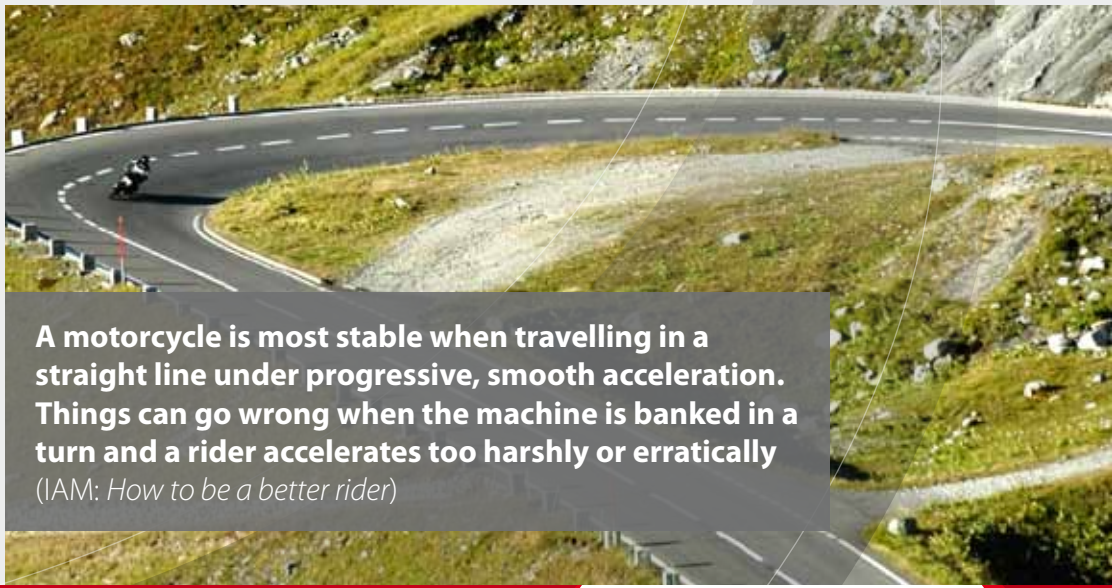
Time of the day

Numbers

- A larger than average share of rider KSI casualties are during daytime at weekends, with more during daytime on Sundays than Saturdays

KSI casualties, times of the day (per cent)



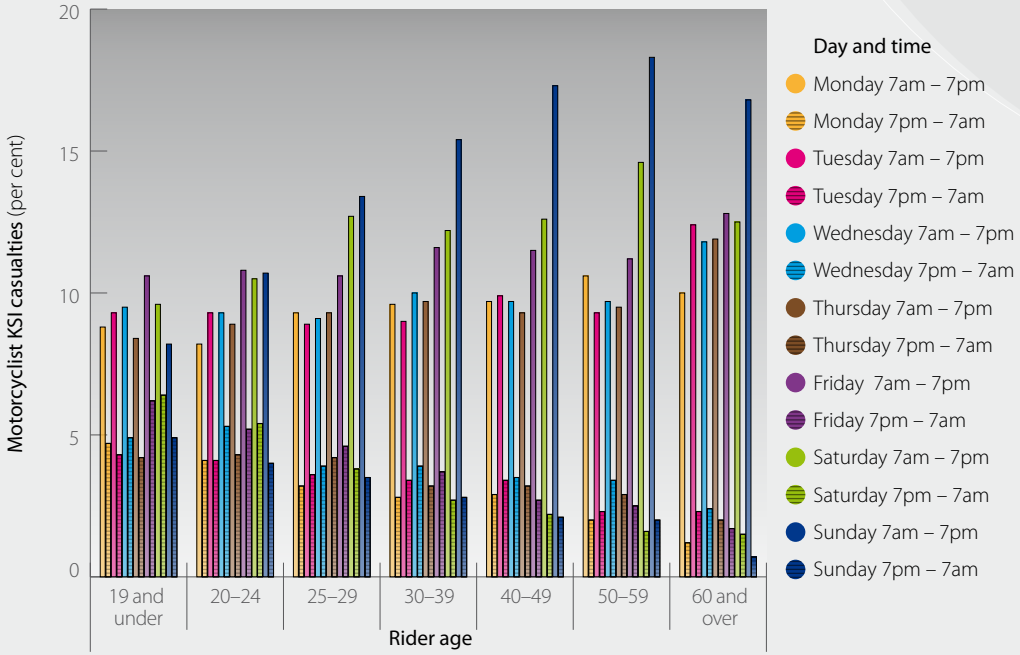


A motorcycle is most stable when travelling in a straight line under progressive, smooth acceleration. Things can go wrong when the machine is banked in a turn and a rider accelerates too harshly or erratically (IAM: *How to be a better rider*)

Rider age

- The age group with the largest proportion of KSI casualties in the evening and overnight is the under 20s; the age group with the largest proportion of KSI casualties in the daytime is the riders in their 50s
- As age of the rider increases, the proportion of KSI casualties which occur in the evening and overnight at the weekend decreases and the proportion that occur in the daytime at weekends increases
- The differences may be due to 'social' evening riding among younger riders and 'recreational' daytime riding among riders over the age of 25

KSI casualties and time of day (per cent)



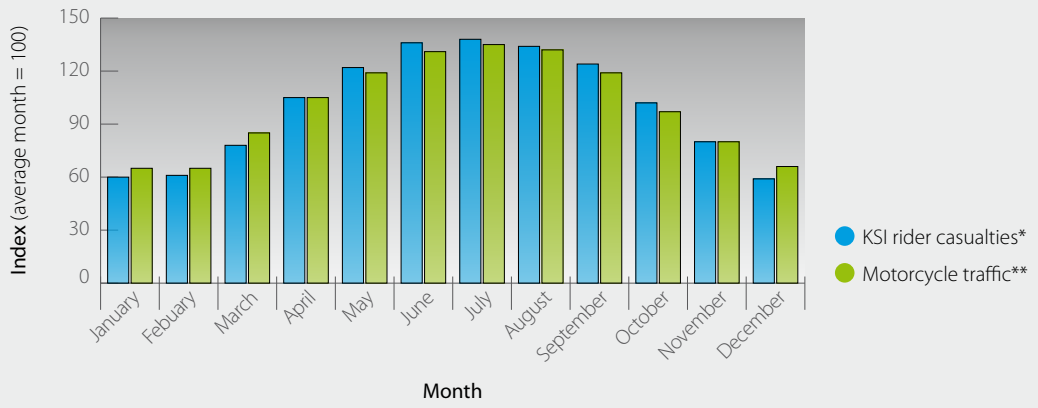
Road surfaces can become surprisingly slippery during the summer, especially after rain or even a heavy dew. Debris particles (dust, rubber, oil etc) can also build up on the road surface, severely reducing grip levels. Tarmac becomes slippery when it gets 'polished' after a long dry spell (IAM: *How to be a better rider*)

Time of year

Numbers

- Casualties broadly reflect bike traffic ie peak riding and casualties in the summer and least during the winter

KSI casualties and motorcycle traffic (index: average month = 100)

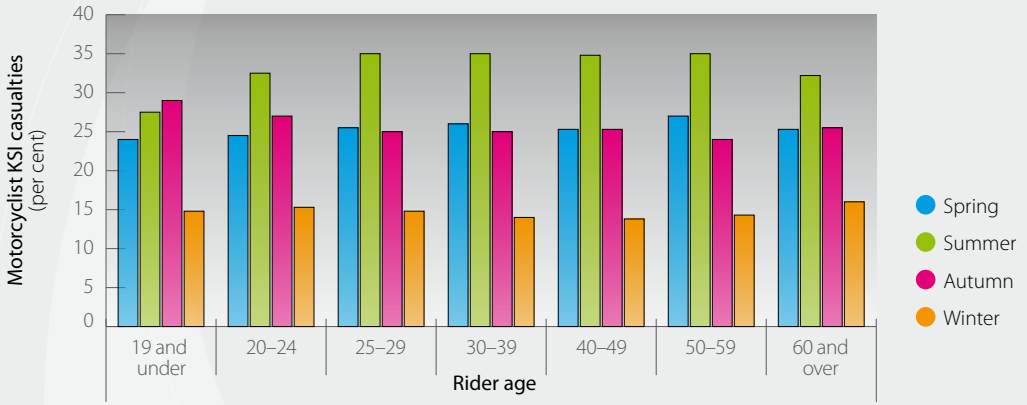


* 2003-2006 ** 2003-2007 traffic survey data (source DfT 2008a)

Rider age

- Motorcyclist KSI casualties under the age of 20 are spread more evenly between seasons than for older riders; the summer casualty peak is most marked in the 25–59 age group, reflecting patterns of motorcycle use:
  - Young riders are less likely to have access to a car as an alternative when riding conditions are unfavourable
  - Older riders are more likely to be involved in seasonal recreational riding
- Riders under 20 represent the largest proportion of KSI casualties in the autumn, probably owing to young people taking up motorcycling when they start work or college

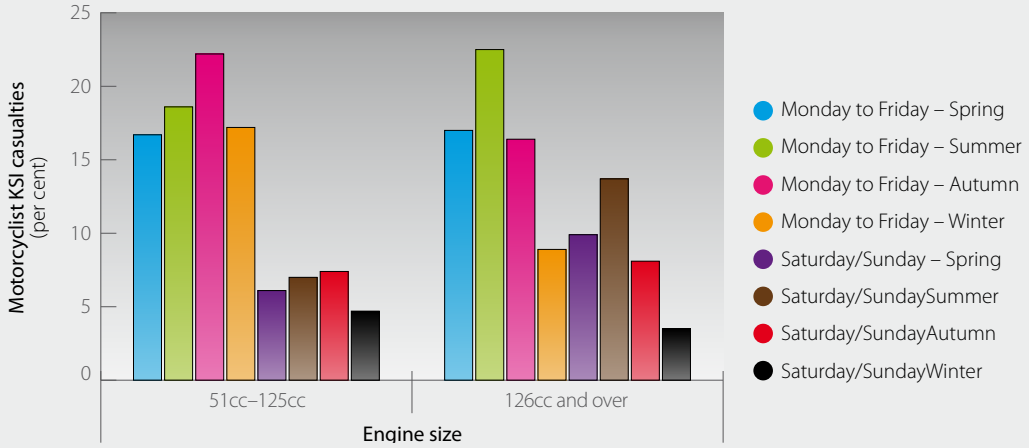
KSI casualties during the four seasons (per cent)



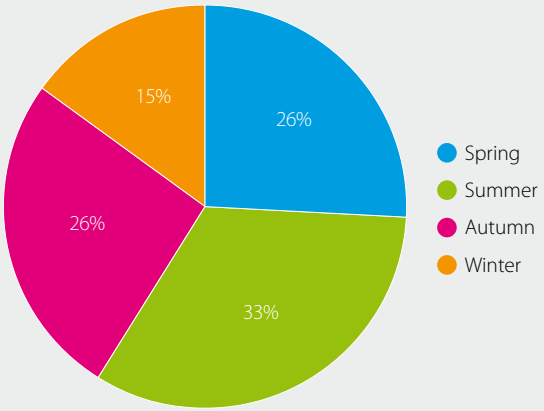
Engine size

- KSI casualties on bikes under 125cc are more evenly spread across the seasons than those on larger bikes, probably because of the greater proportion of young riders using smaller bikes under 125cc (58 per cent aged under 20) and having less access to a car alternative
- A greater proportion of KSI casualties are riding larger bikes during spring and summer weekends, and summer weekdays

KSI casualties over the four seasons and days of the week (per cent)



Motorcycle rider KSI casualties in each season (per cent)



Weather and road surface conditions

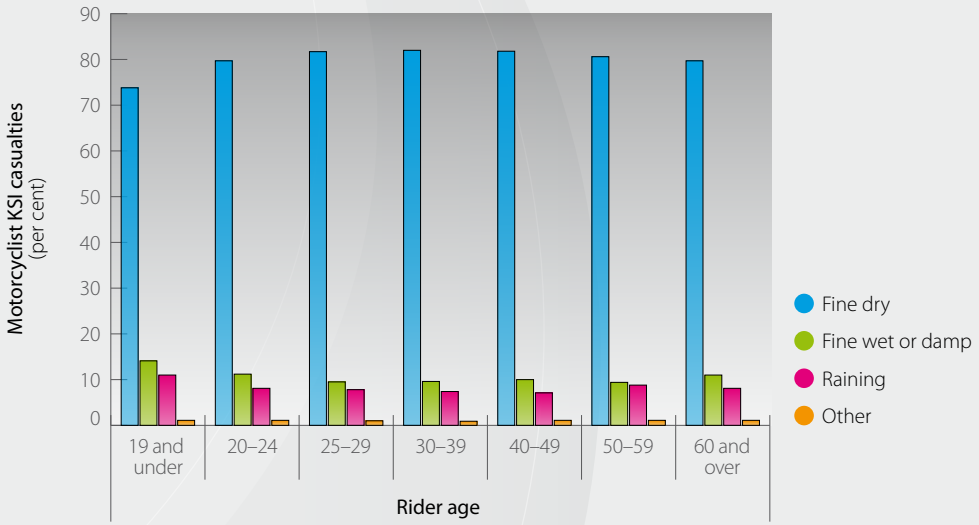
Numbers

- More than three quarters of rider KSI casualties are in fine weather when the road surface is dry – a higher proportion than car drivers
- Other motorcycle research suggests that a combination of seasonal or 'fair weather' riding, and riding faster in good weather may explain the difference

Rider age

- A marginally higher proportion of young rider KSI casualties are on wet or damp roads in fine weather compared with older riders

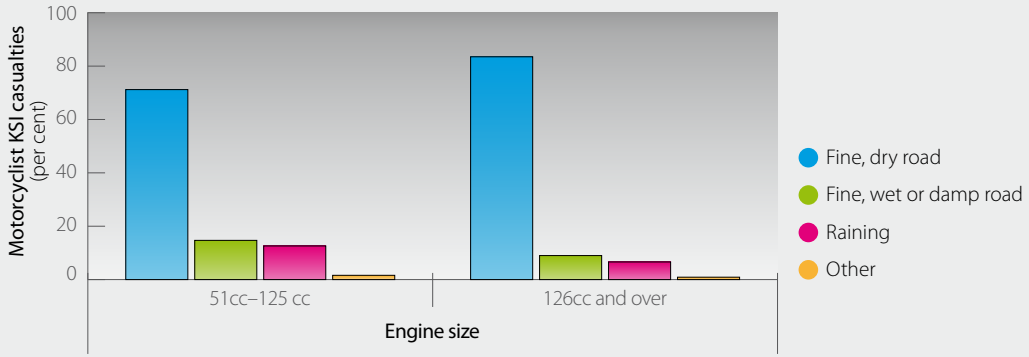
KSI casualties, weather and road surface (per cent)



Engine size

- A larger proportion of rider KSI casualties on smaller (51cc–125cc) bikes occur when it is raining and on wet or damp roads in fine weather, compared with those on larger bikes
- This may be associated with:
  - a higher proportion of younger riders riding all year round on smaller bikes compared with older riders
  - riders of smaller bikes have less experience

KSI casualties, weather and road surface (per cent)



Skidding

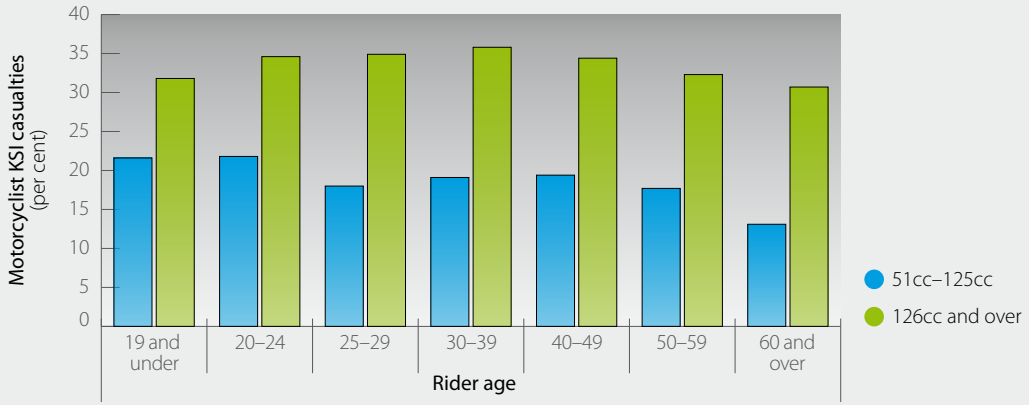
Numbers

- One third of rider KSI casualties involves the rider skidding
- Skidding is a feature in two fifths of single vehicle (motorcycle only) KSI casualties
- In a quarter of KSI casualties involving at least one other vehicle, the motorcycle skidded

Rider age and engine size

- In all age groups, a proportion of riders skidded when riding larger bikes over 125cc (average 35 per cent) compared with riders on smaller bikes (average 20 per cent)

KSI casualties in skidding crashes (per cent)



Collisions with roadside objects

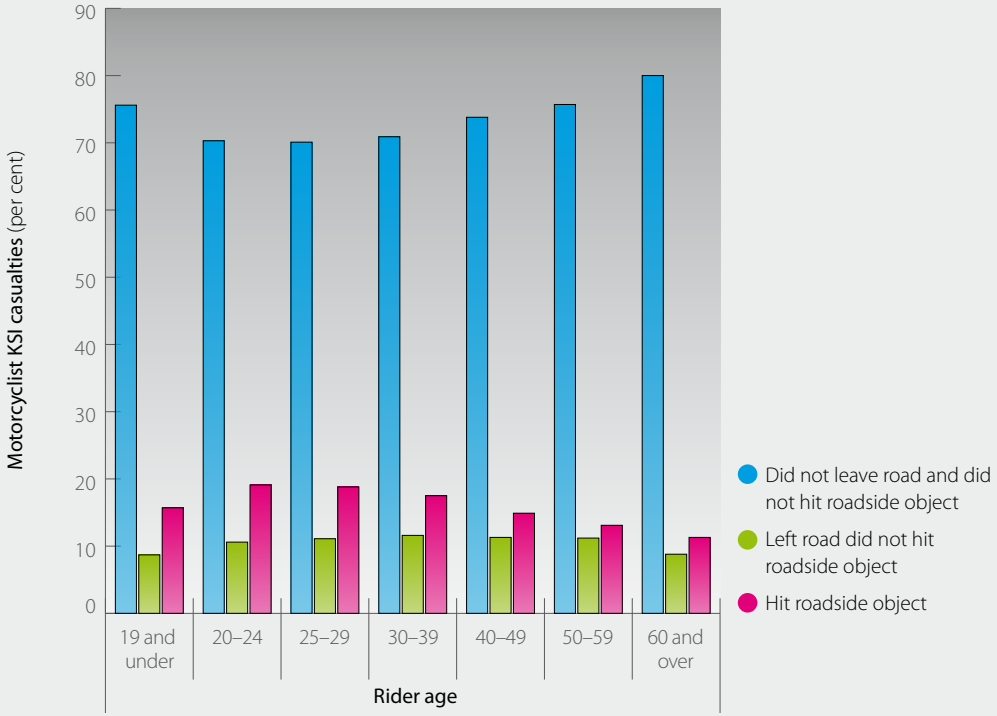
Numbers

- Slightly more than a quarter of rider KSI casualties are on bikes that leave the road during the crash; a sixth of the riders hit a roadside object

Rider age

- A slightly larger proportion of riders in their twenties are in crashes where the bike leaves the road

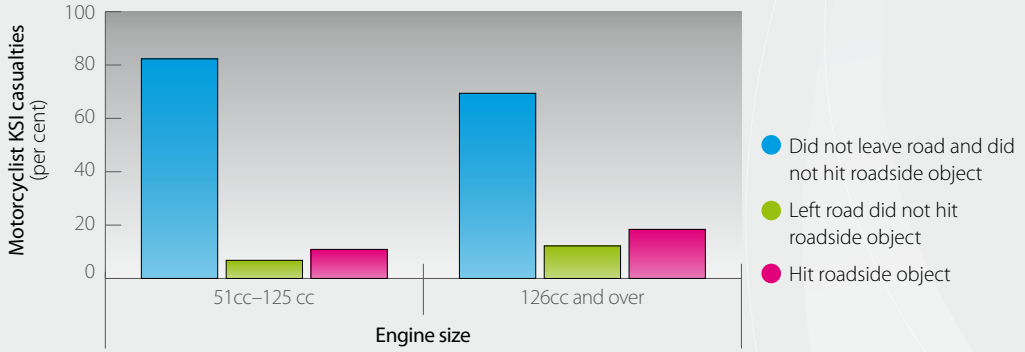
KSI casualties leaving the road/hitting a roadside object (per cent)



Engine size

- A larger proportion of the riders on bikes over 125cc hit a roadside object after leaving the road compared with riders on smaller bikes

KSI casualties leaving the road/hitting a roadside object (per cent)



Hitting roadside objects

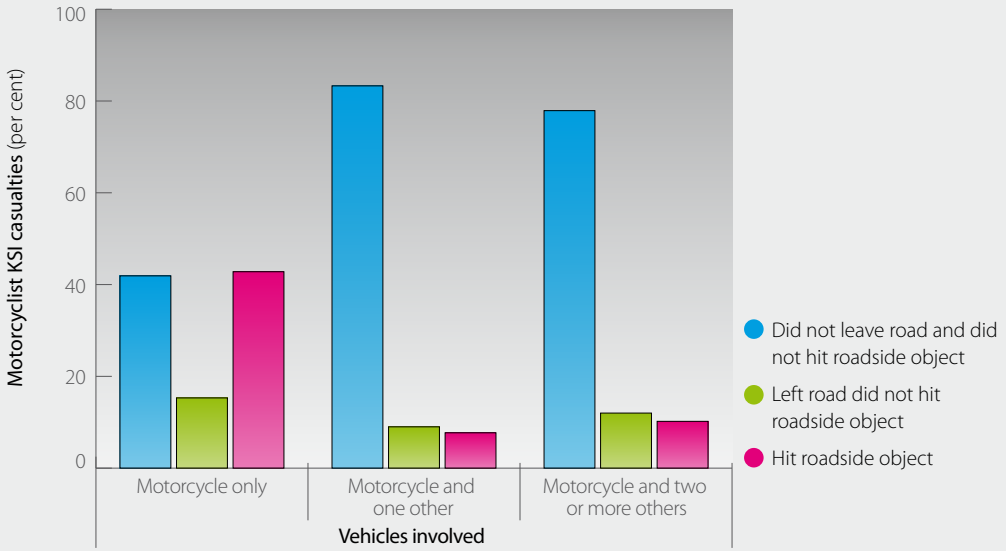
Numbers

- Half of riders killed in crashes are riding bikes that leave the road, a third of these hit a roadside object such as a crash barrier, road sign, tree or lamppost
- 5 per cent of riders who are killed hit a crash barrier, which is designed to save the lives of car occupants but can be lethal to riders (barriers have been developed that minimise barrier impact injuries to riders but few have been installed in the UK)

Injury severity of motorcyclists leaving the road (per cent)

- Leaving the carriageway is more common in single vehicle KSI crashes

KSI casualties leaving the road/hitting a roadside object – vehicles involved (per cent)



Road defects

- Local road surface conditions can be a danger to motorcyclists but police records suggest they contribute to only a small proportion of KSI casualties, eg 4 per cent in single-vehicle accidents, less than 1 per cent involving other vehicles
- Of the riders in single vehicle crashes, the records show:
  - defective road surface in just under 2 per cent of cases
  - oil or diesel on the road in just over 1 per cent of cases
  - mud on the road in less than 1 per cent of cases
- Although relatively small in percentage terms, road defects contribute to around 40 motorcycle KSI casualties a year and a further 30 a year result from oil or diesel spillages

Road surfaces change frequently in town. You'll have drains, manhole covers, speed humps, surface repairs and potholes to deal with (IAM: *How to be a better rider*)

Why there is a high motorcycle casualty rate

The reasons why motorcyclists have a significantly higher casualty rate may be well known but this IAM report adds significant new insights that will help to inform future safety strategies. Studies show that a number of factors can combine to make riding risky, such as: bike size, the riding environment (traffic, road and weather), rider experience, age, gender, errors by other road users and risk taking.

Key factors in individual crashes judged by police officers at a crash scene include:

- **Failure to look properly and loss of control** account for 30 per cent (15 per cent each) of the most commonly recorded factors
- **Failure to look properly** features in a large proportion of moped (up to 50cc) crashes and 'learner' motorcycles (51cc–125cc) crashes, and a smaller proportion for riders of bikes over 500cc
- **Loss of control** features more for larger bikes and less often for mopeds and motorcycles under 125cc
- **Failure to judge another person's path or speed; being careless, reckless or in a hurry** are each factors in 10 to 12 per cent of crashes
- **Travelling too fast for the conditions** – 7 per cent
- **Exceeding the speed limit** – 5 per cent
- **Lack of experience** is attributed to 23 per cent of moped riders and 13 per cent of learner motorcyclists but less than 5 per cent of riders on larger bikes

Jean Hopkin BA (Honours), independent research consultant

Jean Hopkin worked for more than 20 years as a researcher, project manager and team leader at the Transport Research Laboratory, specialising in social policy research in transport and road safety. Since 1995 she has worked as an independent research consultant on a range of public sector projects at local, national and EU level. More recently, she has returned to TRL on a part-time basis, while maintaining her independent consultancy role.

Her road safety research includes work on under-reporting of road accidents, a national hospital-based recording system for road casualties, research into the costs and consequences of road accidents, and valuation of accidents and casualties. She has also worked extensively with road safety practitioners across the UK to develop vocational qualifications for professionals in road safety and for all transport professionals.

She carried out the research for the IAM Motoring Trust reports *Rural roads – the biggest killer, Young drivers - where and when they are safe*, and *16 - the dangerous age for moped riders.*

Notes for readers

- The study was carried out by road safety researcher Jean Hopkin
- It analyses seven years of data (2000-2006 inclusive) on crashes that resulted in death or injury to motorcyclists
- The full report can be downloaded from the IAM's web site www.iam.org.uk
- This printed IAM report is a summary of the main findings and focuses mainly on the crashes that caused motorcyclist death or serious injury
- The analysis of where, when and how motorcyclists are killed or injured is based on official statistics derived from data recorded by police at the crash scene on the *Stats 19* form
- The researcher's interpretations of factors outside the scope of the *Stats 19* data about why certain factors emerge from the analysis are based on research that is referenced in the full report referred to above
- The number of motorcyclists in the population is based on *National Travel Survey* data and not on the number of motorcyclists taking or passing the riding test
- The IAM welcomes debate on the facts and issues that Jean Hopkin's analysis presents; please let us know at info@iamtrust.org.uk what you think should be done to make motorcycling and motorcyclists safer

References

Department for Transport – 2008a. *Compendium of motorcycling statistics*

Department for Transport – 2008b. *Road Casualties Great Britain 2007*

Acknowledgements

The IAM is grateful to the Department for Transport for giving access to the data

President: Nigel Mansell
Chairman: Alistair Cheyne OBE

The IAM (Institute of Advanced Motorists) is the UK's largest independent road safety charity, dedicated to raising driving standards, engaging with the road-using public and influencing road safety policy.

Established in 1956, the IAM is best known for the advanced driving test and the advanced driving course.

The IAM directly influences the driving and riding of more than 160,000 road users a year (full members, associates and commercial clients) in the UK and Ireland.

Brunel University found most drivers and riders who receive advanced driving coaching developed significantly better safety skills, from speed management and cornering to hazard awareness and keener anticipation.

Other IAM road safety initiatives include:

- **the IAM's commercial business –** Drive & Survive and IAM Fleet – provide leading UK occupational driver training that improves the skills of more than 35.000 drivers every year
- **IAM cycling –** through the provision of cycle training and advice, the IAM encourages safe and confident cycling for all, especially on journeys for work and leisure

www.iamtrust.org.uk

Patron: HRH The Duke of Kent
Chairman: Colin Skeen
Director of Policy and Research: Neil Greig

Established in 2007, the Motoring Trust supports the advocacy work of the IAM through an extensive research programme. Core activities include:

- encouraging responsible motoring by promoting further driver/rider training and education
- undertaking an influential programme of transport and road safety research
- promoting practical, evidence-based policies that improve the safety of all road users

Other IAM research projects published in the last two years include:

- ***Cycling Motorists***
- ***IAM motoring facts***
- ***16 –*** *the dangerous age for moped riders*
- ***Young drivers –*** *where, when and why they are unsafe*
- ***Barriers to change –*** *designing safer roads for motorcyclists*
- ***Rural roads –*** *the biggest killer*
- ***Star rating roads for safety*** *(partnership with the Highways Agency)*
- ***Traffic laws and policing –*** *does Sweden do them better?*
- ***Child safety –*** *a guide to parents*

More information for each can be found at iamtrust.org.uk

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iam.org.uk/motorcyclingfacts

IAM
DRIVING ROAD SAFETY

iam.org.uk

Safe riders are made, not born

What advanced riding is about

- Being in total control
- Understanding what you are doing
- Quick, efficient and safe overtaking
- Anticipating other road users' mistakes
- Progressive riding where conditions allow
- Becoming a thinking rider
- Understanding your motorcycle and getting the most out of it
- Developing observation, anticipation and timing at junctions and roundabouts to negotiate traffic with minimal disruption

View the full report at:
iam.org.uk/motorcyclingfacts

Research by Jean Hopkin

Summary report by Bert Morris and Jean Hopkin

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IAM motoring trust

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