

Pedal cyclist casualties in reported road accidents: 2008

Road Accident Statistics Factsheet No. 4 – January 2010



Introduction

This factsheet presents summary information relating to pedal cyclist casualties in reported road accidents; all figures relate to 2008 and Great Britain unless otherwise stated.

Overview – pedal cycle casualties in context

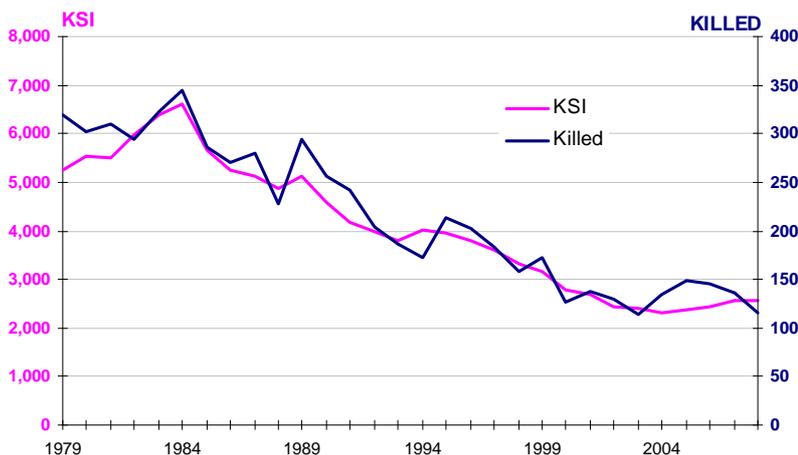
In 2008, there were 115 pedal cyclist fatalities and 2,450 reported seriously injured casualties with the number killed or seriously injured increasing in the last 4 years.

Numbers: In Great Britain in 2008 there were a total of 170,591 reported personal injury road accidents. 16,585 of these – around 10 per cent – involved at least one pedal cyclist, and in total:

- 115 cyclists were killed (5 per cent of total road accident fatalities in 2008)
- 2,450 were seriously injured (9 per cent of the total seriously injured)
- 13,732 were slightly injured (7 per cent of all slight injuries)

Trends: The number of cyclists killed or seriously injured (KSI) fell by 51 per cent from 5,240 in 1979 to 2,565 in 2008, with a 64 per cent drop in deaths from 320 to 115 (see chart) – this compares with a 67 per cent fall in overall KSI and a 60 per cent fall in overall road deaths.

Chart 1: Trend in reported fatal and KSI pedal cyclist casualties: GB 1979-2008



The Government has set a target to reduce the overall number of KSI casualties in road accidents by 40 per cent from the 1994-98 average by 2010.

Compared with the 1994-98 average, the number of pedal cyclist KSI casualties in 2008 was 31 per cent lower. However, there has been an increase of 11 per cent since 2004.

Casualty rates: Measured per kilometre of exposure, overall cycling is one of the riskiest forms of travel (see table). However, the risks to the individual are still very low. The average distance cycled in a year is around 68 km – on this basis there would be one fatality in around half a million years.

Pedal cyclist casualty rates have generally fallen over the last decade, with pedal cycle traffic increasing by 15 per cent compared with the 1994-98 average.

Table 1: Reported casualties per billion passenger kilometres: GB 2007

	Rate per billion passenger kilometres		
	Killed	KSI	All
Bus or coach	0	9	142
Car	2	20	244
Pedestrian	36	382	1,666
Pedal cycle	32	541	3,814
Motorcycle	97	1,116	3,887

International comparisons: Based on 2006 data, pedal cycle fatalities made up 5 per cent of total road accident fatalities in the EU-14¹. Fatality rates per million inhabitants were lower in for the UK than the EU-14 average - 2.5 deaths per million people, compared with 3.9 deaths per million people - the UK rate was the third lowest of the 14 countries. However, this does not take into account differences in pedal cycle traffic across different countries.

¹ EU-14 countries are Belgium, Denmark, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden and the UK. Source: ERSO Traffic Safety Basic Facts 2008: Bicycles

Who are injured as pedal cyclists in road accidents?

Gender: The majority of cyclists reported killed or injured in road accidents are male – men accounted for 81 per cent of all pedal cyclist casualties, 82 per cent of KSIs and 84 per cent of fatalities in 2008 (for all road users, the equivalent figures are 58, 69 and 74 per cent respectively). To some extent this reflects the fact that males account for most distance cycled, and make more cycle trips – on average males make 23 trips per year compared to 9 made by females.

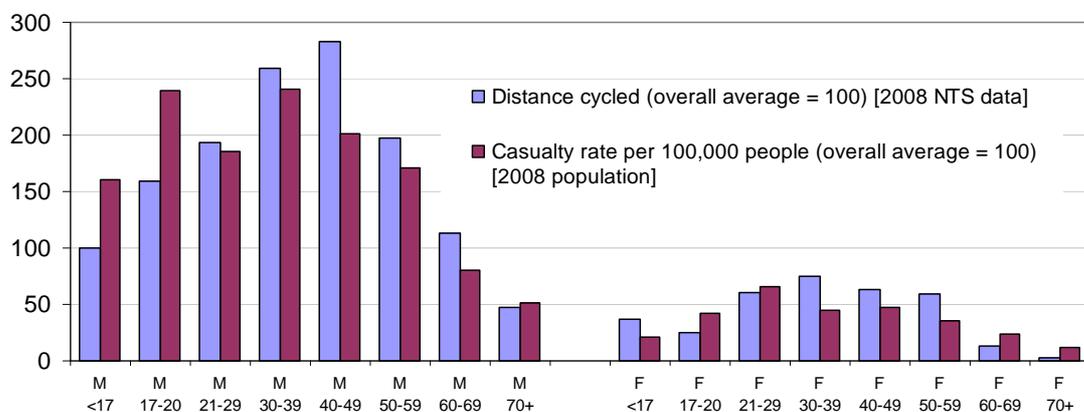
Age: The table shows the breakdown of reported pedal cyclist casualties by severity and age group:

- Children (aged 0-15) account for 20 per cent of cyclist casualties, and 16 per cent of KSI – but only 10 per cent of fatalities. 12 of a total of 124 children killed in road accidents in 2008 were pedal cyclists.
- Cyclist KSI rates per 100,000 people are highest for 12-15 year olds. For this age group, more than 1 in every 5 casualties in a road accident is a pedal cyclist.

Table 2: Severity of reported pedal cyclists casualties by age: GB 2008

	0-4	5-7	8-11	12-15	16-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All ages
Number													
Killed	0	0	6	6	10	16	21	14	20	8	9	5	115
KSI	5	29	132	251	198	430	484	458	313	134	63	21	2,565
All severities	45	259	1,042	1,960	1,301	3,111	3,295	2,547	1,355	604	253	80	16,297
Rate per 100,000 population													
Killed	0	0	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.1	0.2	0.2	0.2
KSI	0.1	1.5	4.8	8.7	6.3	5.3	6.0	5.2	4.3	2.2	1.5	0.8	4.3
All severities	1.3	13	38	68	42	39	41	29	19	9.7	5.9	2.9	27
Percentage of total road casualties for particular age group:													
Killed	0%	0%	17%	12%	3%	3%	5%	4%	9%	5%	4%	2%	5%
KSI	1%	7%	17%	19%	5%	7%	11%	11%	12%	8%	4%	2%	9%
All severities	1%	8%	16%	21%	4%	6%	8%	7%	7%	5%	3%	2%	7%

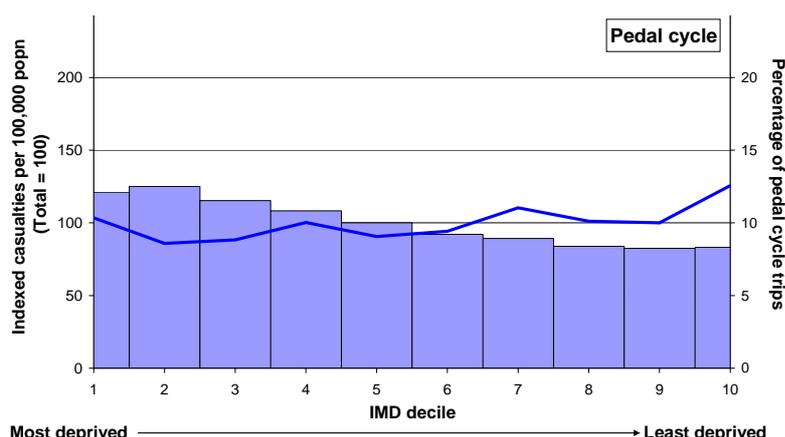
Chart 2: Indexed reported pedal cycle KSI casualty rate and distance cycled by age group and gender: GB 2008



Compared with all casualties in road accidents, pedal cyclist casualties are more likely to be children (20 per cent compared with 10 per cent) and less likely to be aged 60 and over (6 per cent compared with 11 per cent).

Deprivation: Cyclist casualty rates are around 29 per 100,000 people in the most deprived 10 per cent of areas in England, compared with 20 per 100,000 in the least deprived areas². The chart shows how the casualty rate and the number of cycling trips made vary by level of deprivation. Whilst the rate per 100,000 is relatively consistent across all levels of deprivation in urban areas, it is considerably higher for more deprived rural areas.

Chart 3: Indexed pedal cyclist casualties by area: GB 2007



² Data uses 2007 Index of Multiple Deprivation

Where do cycling accidents happen?

Urban/rural: The majority (84 per cent) of reported pedal cycle accidents happened in urban areas; these accidents account for 75 per cent of all pedal cyclist KSI casualties. This is explained by the fact that 77 per cent of cycle traffic was on urban roads in 2008. In comparison, 64 per cent of all accidents and 53 per cent of all KSI casualties occurred in urban areas.

Chart 4: Reported KSI pedal casualties by road type: GB 2008

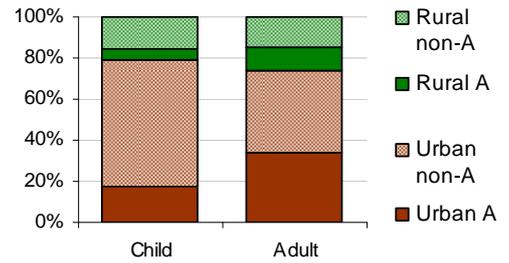
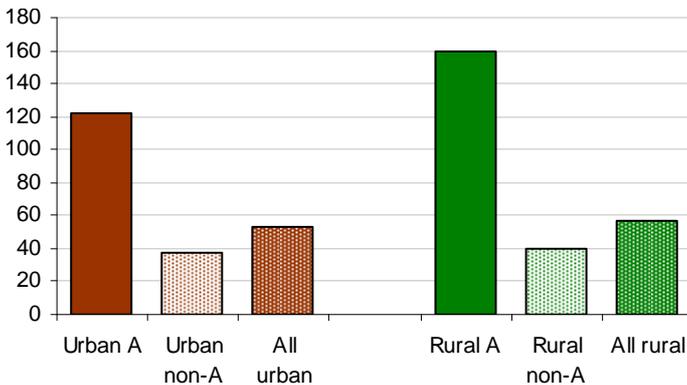


Chart 5: Reported KSI pedal cyclist casualties per 100 million vehicle kilometres by road class: GB 2008



Road class (A road or non-A road):

- Overall 60 per cent of pedal cyclist casualties occur on non-A roads (mostly in urban areas) – including 78 per cent of child pedal cyclist KSI casualties.
- However, when allowing for the amount of pedal cycle traffic (83 per cent of which was on non-A roads in 2008), casualty rates are lower for non-A roads than for A roads, and slightly lower in urban than rural areas – see chart.

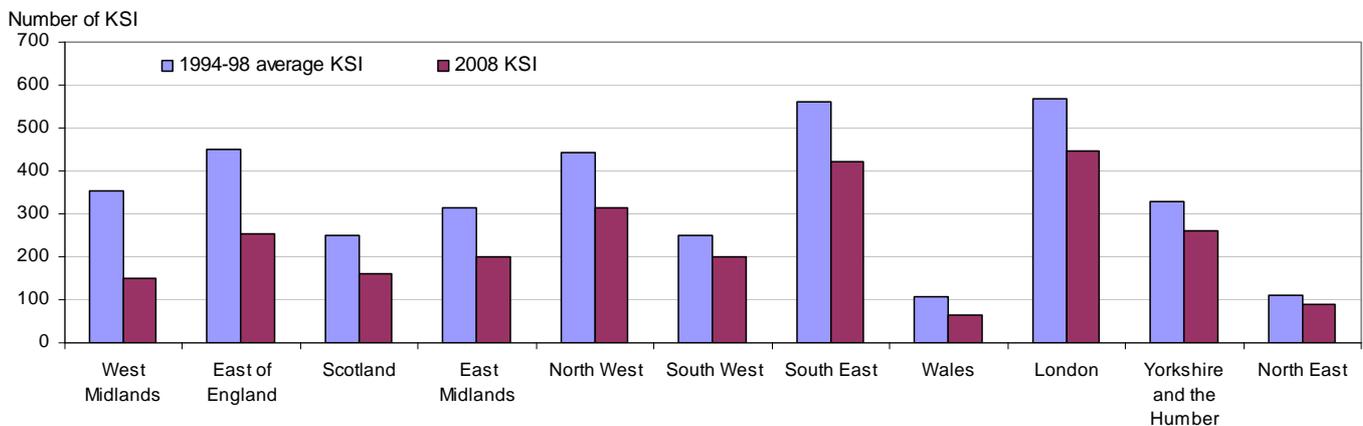
Speed limit (built up and non-built up roads):

- Nearly all reported pedal cyclist casualties occur on built up roads (those with speed limits of 40mph or less) – 92 per cent. The equivalent figure for all road users is 70 per cent. 9 per cent of casualties on built-up roads are pedal cyclists, compared with just 2 per cent of casualties on non-built-up roads.
- However, reported accidents on non-built up roads (those with speed limits of over 40mph) tend to result in more serious injury – around 1 in 3 cyclist casualties in accidents on non built-up roads is killed or seriously injured, compared with around 1 in 7 on built-up roads.

Region:

- 17 per cent of reported pedal cycle KSI casualties in 2008 were in the London region, and over a third (34 per cent) in London and the South East combined.
- The greatest reductions in pedal cycle KSI (in percentage terms) compared with the 1994-98 average have occurred in the West Midlands (57 per cent fall), East of England (43 per cent) and Wales (39 per cent). Changes may reflect changes in the amount of cycling across different regions.

Chart 6: KSI pedal cyclist casualties by Government Region: GB 2008



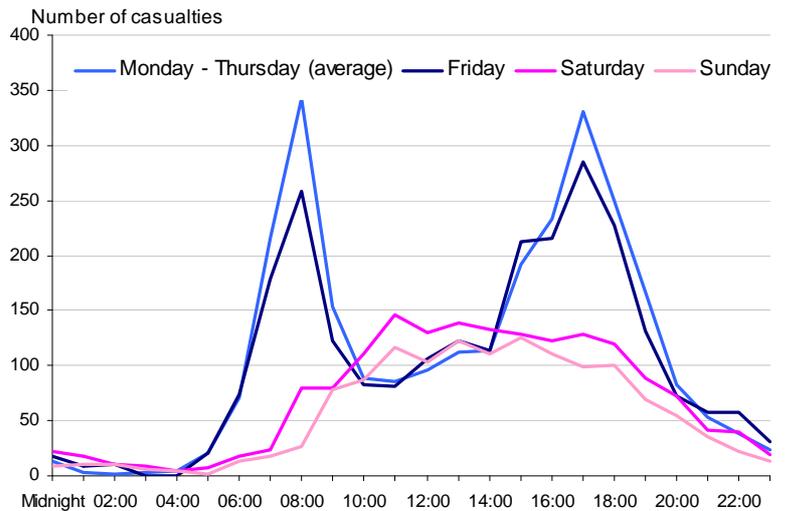
When do pedal cycle accidents happen?

Day of week: In 2008 most reported pedal cycle casualties occurred during the week – 81 per cent. For other road users, the equivalent figure was 74 per cent.

Time of day:

- On weekdays, most pedal cyclist casualties occur during the morning and evening peak periods (chart). On weekends, casualties are more evenly spread through the day.
- Compared with other road users, fewer pedal cyclist casualties occur between 8pm and 4am – 10 per cent. For other road users, this figure is around 18 per cent.
- The above patterns shown for all pedal cycle casualties are broadly similar for those seriously injured

Chart 6: Reported pedal cyclist casualties by day of week: GB 2008



Month of year: Compared with all road users, a greater proportion of reported pedal cyclists KSI casualties occur during the summer months, with fewer during the winter - reflecting the fact that cycle traffic is lower in the winter months. For child pedal cyclists, the pattern is similar (care is needed as numbers each month are small and subject to some fluctuation).

As the chart below shows, there have been some changes in this pattern in recent years, with KSI casualties more spread over the summer in 2007 and 2008, compared with clearer peaks in June that occurred in 2003 and 2004 – possibly reflecting weather patterns.

Chart 7: Reported KSI pedal cyclist casualties by month: GB 2008

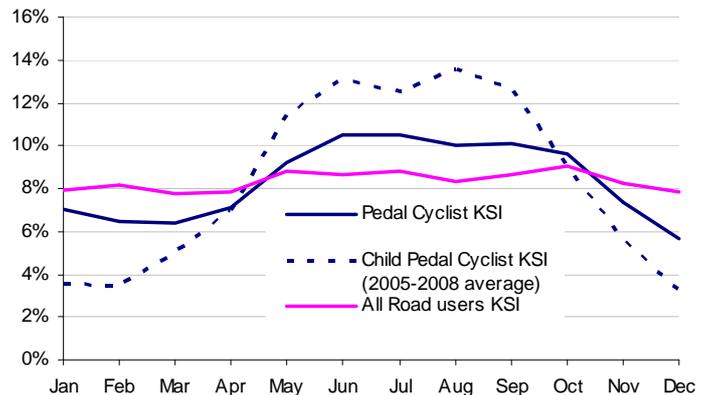
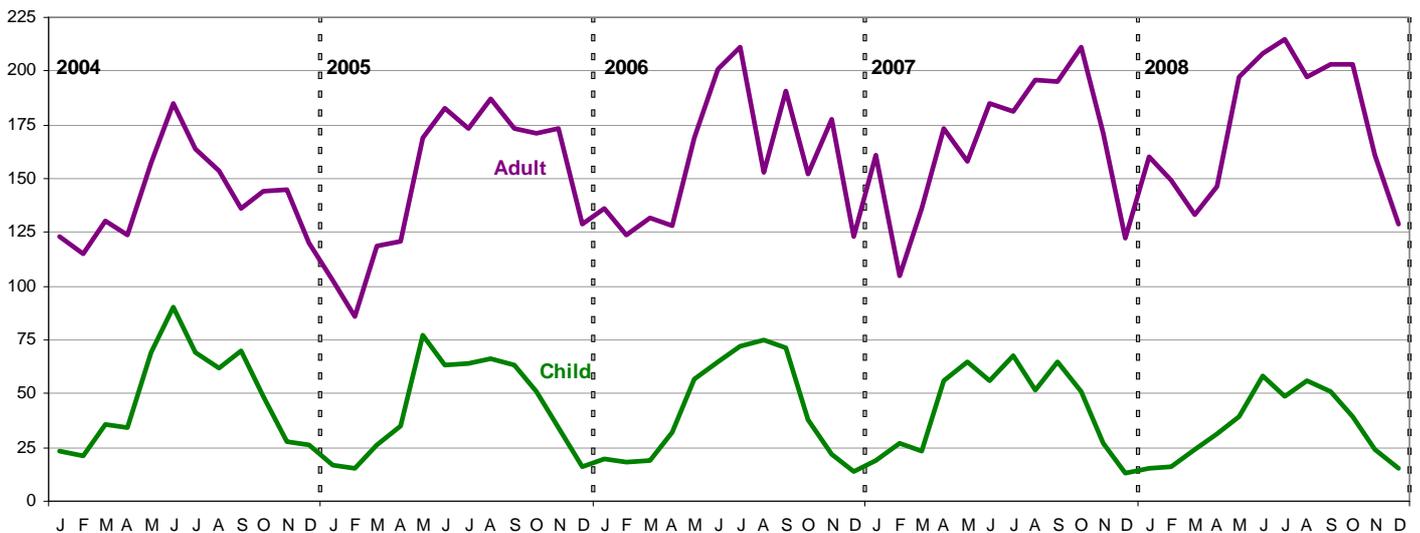


Chart 8: Reported Pedal cycle KSI casualties, by month, and age of casualty: GB 2004-2008



Children travelling to school: The National Travel Survey (2008) records that 2 per cent of primary school children and 2 per cent of secondary school children cycle to school.

What are the accident circumstances?

Number of vehicles: Most reported accidents (93 per cent) involving pedal cycles involve two vehicles (the pedal cycle and one other). In comparison, 59 per cent of all accidents involve two vehicles. This may reflect the fact that accidents involving only a pedal cyclist are less likely to become known to police than other types of accident. Pedal cycle accidents have an average of 1.04 casualties per accident (compared with 1.35 for all accidents), and 95 per cent of the casualties resulting from a pedal cyclist accident are pedal cyclists.

Vehicles involved.

- 80 per cent of pedal cycle accidents involve a pedal cycle and a car. Such accidents account for 73 per cent of killed and seriously injured pedal cyclists, and 81 per cent of all pedal cyclist casualties.
- Accidents between a pedal cycle and HGV were more likely to result in serious injury or death, with 7 per cent of pedal cyclist casualties in these accidents being fatalities, compared with less than 1 per cent of all pedal cyclist casualties. Over 1 in 5 pedal cyclists killed was in an accident with an HGV.
- Accidents between two pedal cyclists also result in more serious injury (30 per cent of casualties were killed or seriously injured compared to 14.9 per cent in the average two vehicle accident involving a pedal cyclist). However, this is likely to reflect the fact that less serious accidents are less likely to become known to police in this case.

Table 3: Vehicle number and type in reported accidents involving pedal cyclists: GB 2008

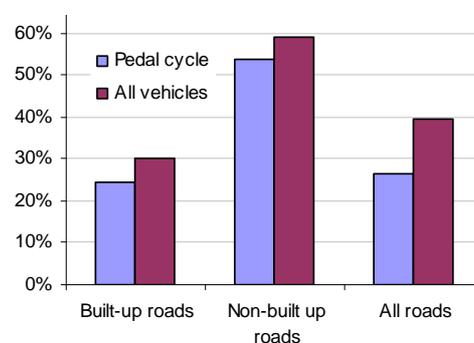
	Accidents		Pedal cyclist casualties					
	Number	Percent	Killed	Serious	Slight	All severities	Percentage killed	Percentage KSI
Single vehicle accidents	617	4	8	146	280	434	1.8	35.5
with pedestrian	381	2	8	143	233	384	2.1	39.3
with no pedestrian	236	1	0	3	47	50	0.0	6.0
Two vehicle accidents	15,462	93	89	2,183	13,019	15,291	0.6	14.9
with other pedal cycle	80	0	0	30	70	100	0.0	30.0
with motorcycle	280	2	0	25	201	226	0.0	11.1
with car	13,272	80	52	1,813	11,308	13,173	0.4	14.2
with bus or coach	381	2	6	56	292	354	1.7	17.5
with LGV	863	5	5	133	720	858	0.6	16.1
with HGV	341	2	24	81	235	340	7.1	30.9
with other vehicle	238	1	2	44	187	233	0.9	19.7
Three or more vehicles	506	3	18	121	433	572	3.1	24.3
All pedal cycle accidents	16,585	100	115	2,450	13,732	16,297	0.7	15.7

Vehicle location and movement: Pedal cycles involved in reported accidents were more likely to be at a junction than other types of vehicles involved in accidents (73 per cent compared to 61 per cent). This could reflect the fact that a higher proportion of pedal cycle accidents are on built up roads (92 per cent), and on built up roads a higher percentage of accidents are at junctions (68 per cent of accidents compared to 34 per cent on non built up roads). Most pedal cycles in accidents were recorded as 'going ahead' - 78 per cent. This compares with 68 per cent of motorcycles and 53 per cent of other vehicles involved in accidents. 3 per cent of pedal cycles involved in accidents were recorded as being on the footway, and a further 1 per cent on a cycle lane or cycleway.

Pedestrians hit by pedal cycles: The number of pedestrian casualties in accidents with pedal cycles is small, with 1 pedestrian fatality, 52 serious injuries and 261 casualties in total in 2008.

Hit and run: 1 in every 6 pedal cyclist casualties (16 per cent) occur in a 'hit and run' accident – a total of 2,683 in 2008 of which 327 were seriously injured and 9 killed. Pedal cyclists are over-represented in these accidents, representing 12 per cent of hit and run casualties (compared with 7 per cent of all casualties).

Chart 9: Vehicles involved in reported accidents by road type: GB 2008



Why do pedal cycle accidents happen?

Contributory factors: Details of factors contributing to injury accidents are recorded by the police. Whilst it is not possible to determine blame from these contributory factors they may offer some insight in common types of accident. An accident can have more than one contributory factor.

- Pedal cyclists were more likely to have no contributory factor³ recorded than other vehicles involved in pedal cycle accidents - 47 per cent compared with 35 per cent.
- *Failed to look properly* was the most commonly recorded factor for both pedal cyclists and other vehicles - assigned more often to vehicles other than the pedal cycle.
- For around 9 per cent of pedal cycles, *entering road from pavement* was recorded as a contributory factor. Pedal cyclists were also more likely to have *loss of control* recorded as a factor (in 4 per cent of cases).

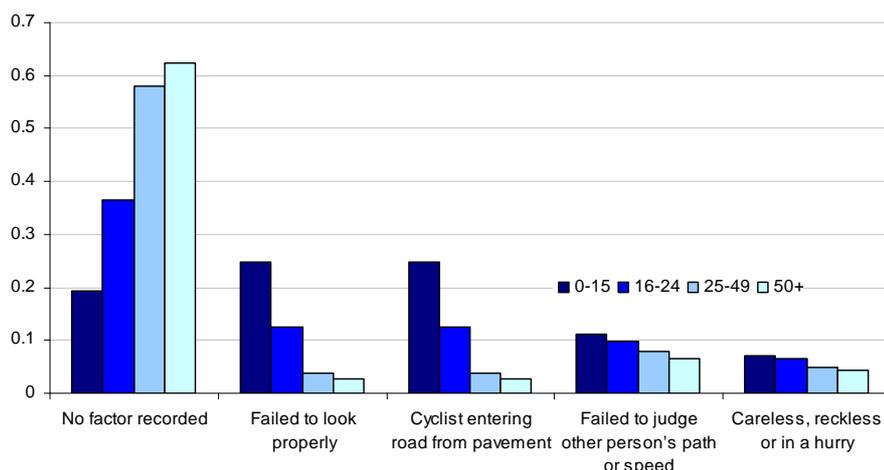
Table 4: Contributory factors in reported accidents³ involving at least one pedal cycle (with no pedestrian casualties)

Contributory factor	Pedal cycle		Other vehicle		All vehicles	
	Number	Per cent	Number	Per cent	Number	Per cent
No factor recorded for vehicle	5,005	47	3,649	35	8,654	41
Failed to look properly	2,692	25	4,220	40	6,912	33
Failed to judge other person's path or speed	920	9	1,366	13	2,286	11
Careless, reckless or in a hurry	834	8	1,007	10	1,841	9
Poor turn or manoeuvre	607	6	1,150	11	1,757	8
Cyclist entering road from pavement	1,000	9	53	1	1,053	5
Passing too close to cyclist, horse rider or pedestrian	36	0	880	8	916	4
Stationary or parked vehicle(s)	238	2	385	4	623	3
Loss of control	433	4	94	1	527	3
Disobeyed 'Give Way' or 'Stop' sign or markings	177	2	289	3	466	2
Number of vehicles	10,596		10,423		21,019	

The chart shows the five most common factors attributed to pedal cyclists involved in accidents, by age group:

- Younger cyclists are much more likely to have at least one factor recorded – more than 8 of every 10 children had at least one factor, compared with around 4 in 10 of those aged 25 and over.
- Children were more likely to have the factors *failed to look properly*, *careless, reckless or in a hurry*, *cyclist entered road from pavement* and *failed to judge speed*.
- In addition 5 per cent of child pedal cyclist casualties had the factor *learner/inexperienced rider* - compared with less than 1 in 1000 of those aged 25 and over.

Chart 10: Contributory factors for reported accidents involving pedal cyclists by age: GB 2008



Involvement of alcohol: Very few pedal cyclist casualties occur in accidents involving a drink-driver – 120 in 2007 (fewer than 1 per cent of all drink-drive casualties). Coroners' data suggests that among adult pedal cyclist fatalities fewer are over the legal limit for driving a motor vehicle than other types of road user (17 per cent compared to 22 per cent – excluding motorcycles – in 2007) - though this is based on a small number of cases.

³ Figures relate only to those accidents at which a police officer attended the scene and at least one contributory factor was recorded.

What are the medical consequences of accidents for cyclists?

Information on the medical consequences of pedal cycle casualties in road accidents can be obtained from hospital inpatient data (Hospital Episode Statistics, HES – 2007 data).

- Most pedal cycle admissions are the result of injuries to the arms/shoulders or the head/face.
- Compared to other road user types, a higher proportion of cyclists were admitted with arm/shoulder injuries – 43 per cent of cyclist admissions, compared with around a third of all road casualty admissions (including cyclists).

Notes

Coverage: The definition of pedal cycles used in reporting of road accidents for the STATS19 database includes tandems, tricycles and toy cycles ridden on the carriageway. From 1983 the definition has included a small number of cycles and tricycles with battery assistance with a maximum speed of 15mph.

Under-reporting: Whilst the vast majority of road accident fatalities become known to the police, studies have shown that an appreciable proportion of non-fatal injury accidents are not reported and therefore not included in the data. These studies have shown that reporting rates for pedal cyclists involving in single vehicle accidents tend to be lower than for other road users. Further details on this issue can be found in the 2006 edition of Road Casualties Great Britain (see link below).

Further information

This factsheet presents summary information relating to pedal cycle casualties in road accidents in Great Britain. The following are sources of further information:

- **Road Casualties Great Britain: Annual Report.** This contains information on all road accidents in Great Britain, including more detailed figures and tables relating to pedal cycles involved in accidents and pedal cyclist casualties. In particular, the 2006 report contains an article containing further details of coverage of pedal cycle casualties in hospital data. The publication can be accessed online at <http://www.dft.gov.uk/pgr/statistics/datatablespublications/accidents/casualtiesgbar/>
- **National Travel Survey.** The Department's National Travel Survey collects information about cycling activities, and provides data on trends that can be used to calculate casualty rates. An overview is published in the NTS factsheet on cycling: <http://www.dft.gov.uk/pgr/statistics/datatablespublications/personal/factsheets/cyclefactsheet.pdf>
More details and figures can be found in the NTS annual report: <http://www.dft.gov.uk/pgr/statistics/datatablespublications/personal/mainresults/nts2008/>
- **Research studies.** The Department for Transport has commissioned a number of research studies into different aspects of cycling safety. Details can be found on the Department's road safety webpage at <http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme1/>
The Transport Research Laboratory also publishes research on a wide range of road safety topics, including cycle helmet wearing rates: <http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme1/ppr446.pdf>

Any enquiries relating to the figures in this factsheet or requests for further information on pedal cycle accidents and casualties in Great Britain can be addressed to the Road Accident Statistics branch at the Department for Transport:

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Email: roadacc.stats@dft.gsi.gov.uk

Figure 1: Areas of injury on pedal cyclist casualties: GB 2007

