

NORTH EAST Regional Road Safety Resource

Project Report: 4.

Regional Overview of Motorcycle Accidents 2005 – 2007.

**Produced May 2008.
Natalie Goodman**

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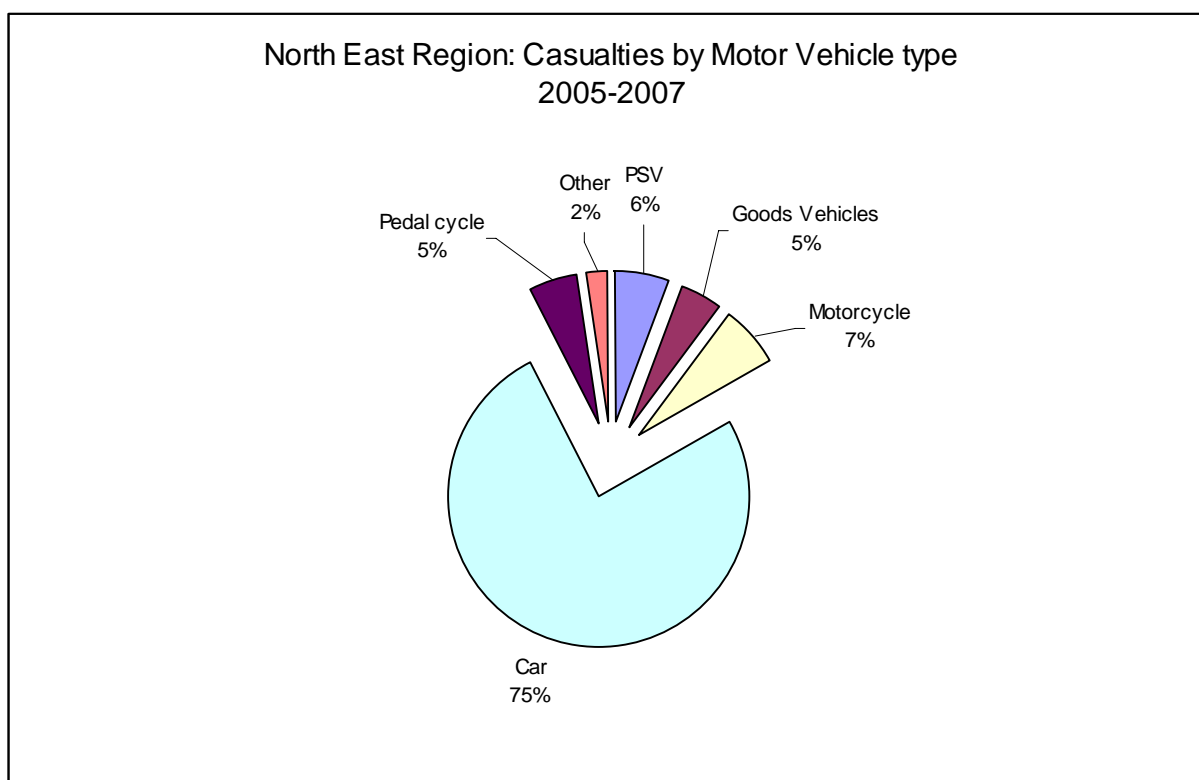
Introduction

This report has been produced by the North East Regional Resource as an overview of accidents involving motorcyclists in the NE region 2005 -2007. The data used to produce the report is based on the project database of Stats 19 provided by Cleveland, Durham and Northumbria police forces.

Profile of Motorcycle Accidents 2005 – 2007

Motorcycle accidents account for 7% of road accidents in the North East Region in the period 2005-7. The Killed or Seriously Injured (KSI) rate for motorcycles was 33% which is 5% higher than the national average (2006: DFT). There are more KSI accidents associated with motorcycles over 125cc than with motorcycles under 125cc.

Figure 1. Casualties by Motor Vehicle Type – 2005-2007.



The pattern of motorcycle ownership is similar across the region, 86% of all accidents in which motorcycles over 125cc were involved, had riders who were 25 years or older. The converse is true for the use of small machines with 66% of motorcycles which were 125cc or under being used by those 24 years or under.

Figure 2. Age profile of Motorcycle Rider Casualties 2005-2007

Age group	Under 125cc	Over 125cc	Total
16	15.9%	0.4%	7.6%
17-19	30.7%	3.7%	16.2%
20-24	18.9%	9.8%	14.0%
25-29	8.6%	11.1%	10.0%
30-39	11.9%	27.1%	20.9%
40-49	8.2%	30.8%	20.4%
50-59	3.6%	13.1%	8.7%
60-69	0.9%	3.1%	2.1%
70-99	0.8%	0.5%	0.6%

DVLA licence figures (2006) indicate that 95% of motorcycle licence holders are male. This is reflected in the accident rate in the North East Region where the majority of motorcycle riders involved in accidents are male. Only 5% of accidents involved female riders within the period 2005-2007.

Road Class

The majority of accidents involving Motorcycles Over 125cc are on A roads (52%) with a further 30% on B and C roads. While smaller machines, under 125cc showed 33% of accidents on A roads this was balanced by a 36.7% accident rate on unclassified roads.

Figure 3. Road Class profile of Motorcycle Rider Casualties 2005-2007

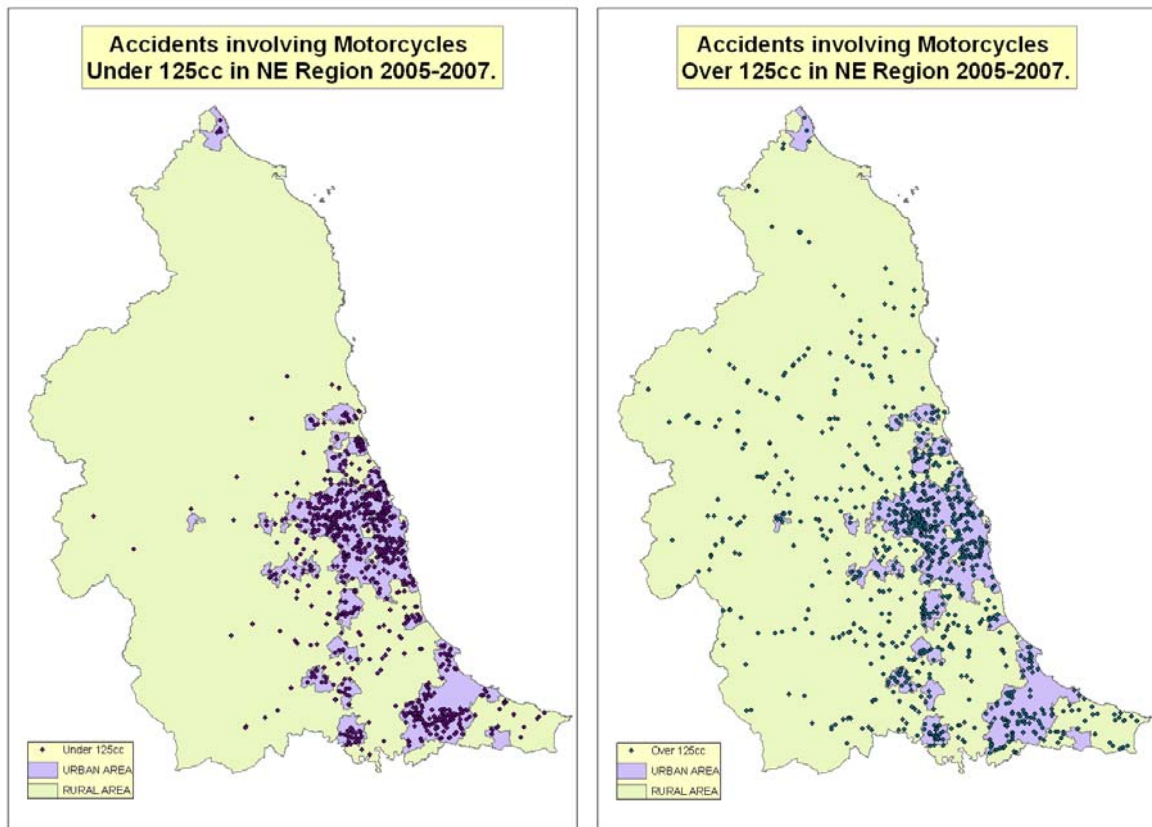
Road Class	Under 125cc	Over 125cc	Total
A	33.3%	52.3%	43.3%
A (M)	0.1%	1.2%	0.7%
B	12.3%	15.6%	14.1%
C	17.4%	14.3%	15.8%
Unclassified	36.7%	16.5%	26.1%

Rural Urban Areas

The pattern of road usage by engine size is particularly noticeable when the site of accidents is mapped against urban and rural areas. It is immediately noticeable that smaller motorcycles are a feature of urban areas and that larger motorcycles are involved in accidents over a much wider spread, out into the rural areas. This reflects the larger bike riders desire to 'go out for a run' and the greater potential radius of travel on larger machines.

Police forces and local authorities in the NE region target their bike riders in different ways according to the force areas geographical structure and the type of biker they are dealing with.

Motorcycle Accidents by Urban & Rural Areas in NE Region 2005-7



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There are far fewer accidents involving motorcycles under 125cc in rural areas (7.7%) which reflects the fact that smaller machines tend to be used in urban areas.

Figure 4. Accidents by engine size and area, NE Region 2005-7.

Under 125cc		Over 125cc	
Urban	Rural	Urban	Rural
39.20%	7.73%	30.50%	22.57%

When do accidents occur

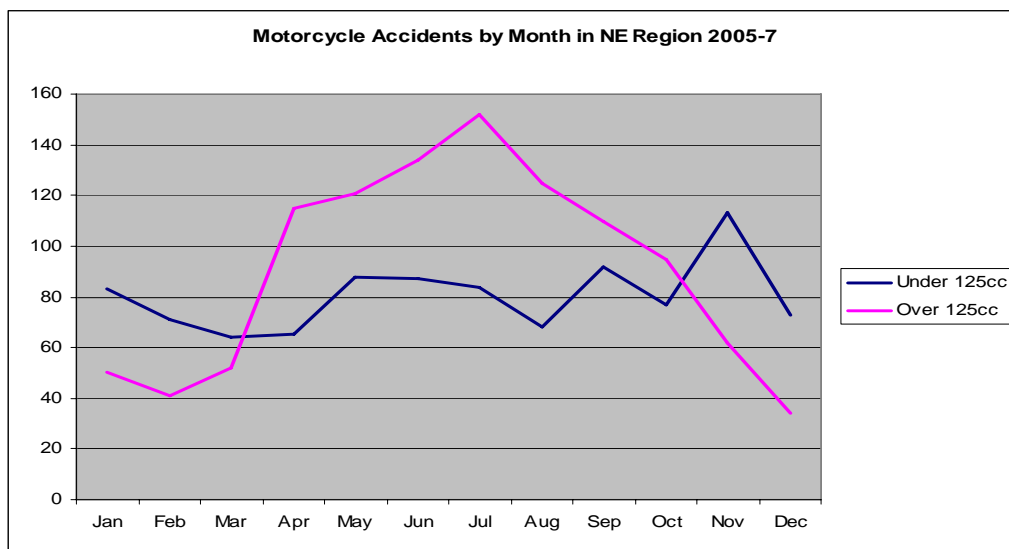
Accidents on motorcycles over 125cc follow the classic pattern of bikes being brought out for the 'summer season' with bikers making the most of the better weather. This has resulted in a misleading perception that motorcycle accidents are a feature of the summer months. In the case of smaller machines, under 125cc, the pattern is more stable throughout the year, reflecting a different kind of motorcycle usage in urban areas. There are also accidents involving all sizes of motorcycle throughout the year. (See map above).

Motorcycle ownership has increased in the UK since 1996. The number of new motorcycle registrations has increased by the greatest amount for machines with engines under 125cc.

(Compendium of Motorcycle Statistics. 2007). Smaller machines are used for work, business and education.

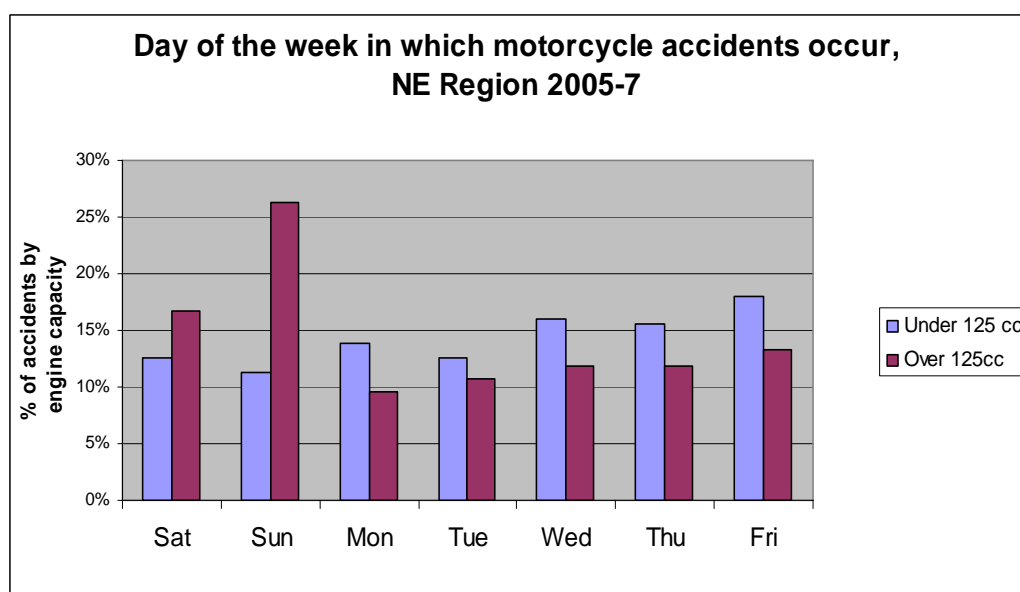
Since the 1994-8 average baseline, motorcycle traffic has increased by 33% with fatalities rising over the same period. The number of serious casualties remains relatively unchanged meaning that the overall KSI rate has actually shown a decrease over time (DFT 2006).

Figure 5. Motorcycle Accidents by month, 2005-2007



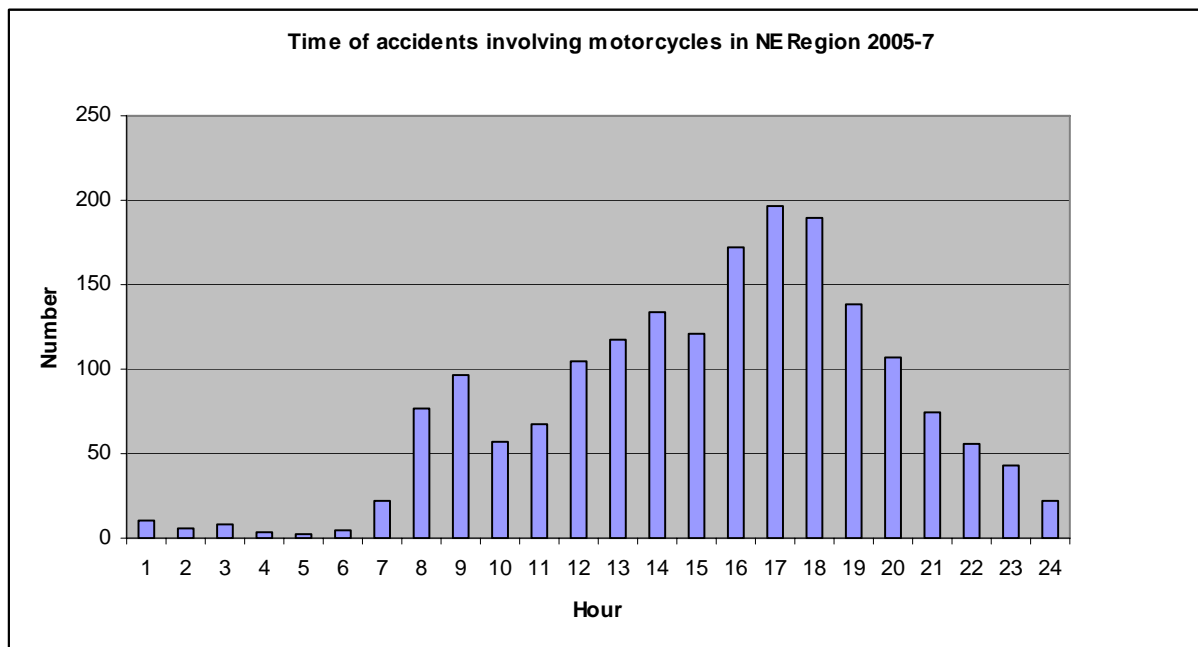
Analysis of the daily accident rates shows that larger machines are involved in most accidents at weekends, particularly on Sundays (26% of over 125cc) and that machines under 125cc are more likely to be involved in incidents during the week. This may reflect on changing traffic flows and changing vehicle use in urban areas.

Figure 6. Motorcycle Accidents by day of the week, 2005-2007.



The peak times of the day for motorcycle accidents are around 9am and 5pm, reflecting peak traffic flow when motorcycles are most likely to come into conflict with other road users.

Figure 7. Time of motorcycle accidents in NE Region 2005-7.



Most motorcycle accidents happen during daylight hours (78%) with more motorcycles under 125cc being involved in accidents after dark.

Figure 8. Motorcycle Accidents and light conditions, NE Region 2005-7.

	Dark	Light
<125	33.5%	66.7%
Over 125cc	11.5%	88.5%
Total	21.7%	78.3%

Location of accident

The majority of motorcycle accidents happen at low speeds in urban areas. 61% of motorcycle accidents in the North East Region during 2005-7 occurred on roads with 30mph speed limits. 58% of KSI accidents occurred on roads with speed limits of 40pmh or lower. These are similar patterns to accidents involving other vehicle types.

Analysis of junction type shows that there are distinct rural / urban differences for accidents by junction type, this reflects that there are fewer junctions in rural areas. Comparison of car and motorcycle accidents shows that motorcycles have slightly more accidents on roundabouts and at T junctions in urban areas.

Figure 9. Accidents Car and Motorcycles by Junction Type and Rural / Urban site NE Region 2005-2007.

Junction type	Motorcycle		Car	
	Urban	Rural	Urban	Rural
Not within 20m of junction	27.75%	52.93%	33.49%	54.26%
Roundabout	16.92%	10.66%	15.67%	7.55%
Mini roundabout	1.09%	0.36%	1.09%	0.31%
'T' or staggered junction	38.67%	25.04%	32.91%	26.49%
Slip road	2.18%	0.00%	2.85%	1.89%
Crossroads	8.19%	2.66%	9.59%	3.68%
Multiple junction	3.82%	7.82%	0.62%	0.07%
Private drive or entrance	1.36%	0.53%	2.87%	4.97%
Other junction	0.00%	0.00%	0.90%	0.78%

Comparison of motorcycles by engine size shows that there are differences in accident rates at rural and urban junctions, for example motorcycles under 125cc have higher accident rates at T junctions than larger motorcycles in both urban and rural areas.

Cause of accidents

Motorcycles most often come into conflict with other vehicles when they are at junctions. Snapshot analysis of 2007 motorcycle accident records causation codes in the Northumbria area indicated that in 65% of accidents the motorcyclist was at fault.

The riders in age group 16–24 are most likely to have made errors which contributed to the accident and this age group are most likely to be using machines under 125cc (87%). The use of smaller motorcycles is a feature of urban areas, where traffic density is at its greatest. This combines with the potential inexperience of younger riders and contributes to the number of collisions.

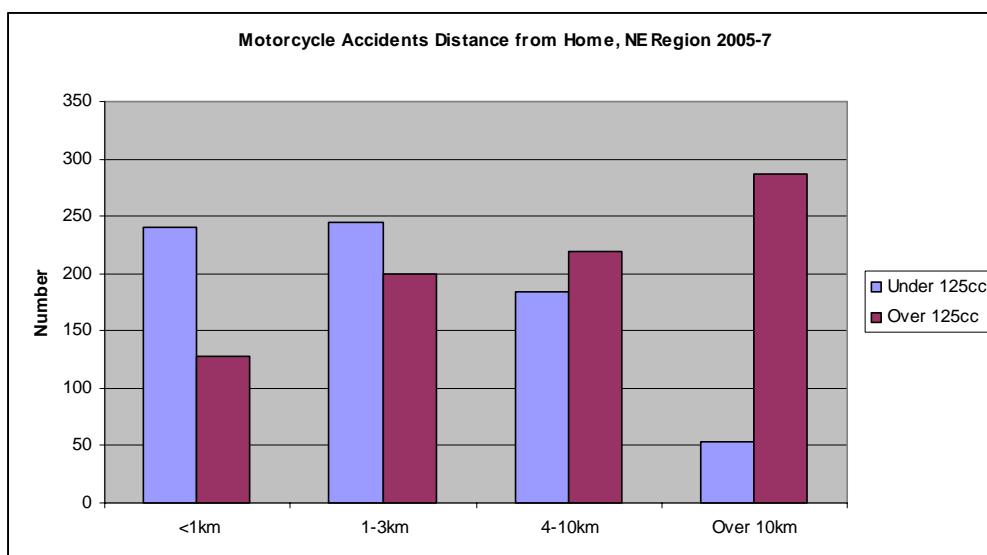
There are however variations in accident rates for motorcycle riders, for example, at T or Staggered junctions ‘other drivers’ were responsible for 65% of the collisions. This means that other road users also need to be educated about greater awareness of motorcyclists in particular in urban areas.

Local police forces are actively engaging with motorcyclists to promote safe cornering and riding techniques. Road Safety activity is now focussing on small machines used in urban areas, as well as those riders using larger machines.

Distance from home

58% of motorcycle accidents occur within 5km of the riders home address. This figure rises to 73% for machines under 125cc. This pattern emphasises the fact that riders of larger machines travel further distances.

Figure 10. Distance between accident site and home address of driver, NE Region 2005-7.



* analytical note. Distance calculations are based on those accident records which had casualty postcodes recorded. This relates to 76% of Motorcycle accident records in the NE Region, 2005-2007.

Analysis of why riders are taking their journeys shows that 20% of journeys were for work or travelling to work purposes. This suggests that the majority of journeys are related to social or domestic reasons. It must be noted however that the purpose of journey was only recorded in 22% of cases and that further research would be required to examine the topic more thoroughly.

Headline notes.

- Accidents involving motorcycles under 125cc are concentrated in urban areas
- 87% of riders aged under 24 are on motorcycles 125cc or below.
- In 60% of motorcycle accidents the rider has made an error contributing to the collision.
- The riders aged 16–24 are most likely to make errors contributing to accidents.
- 56% of all Motorcycle accidents are in 30 mph limits.
- 54% of Motorcycle KSI's are in speed limit areas under 40 mph
- There are far fewer accidents involving motorcycles under 125cc in rural areas (7.7%)
- 36% of accidents occur at T or staggered junctions, 62% of those accidents are NOT the motorcycle riders fault.
- 73% of accidents on machines under 125cc take place within 5km of the riders home address.

Road Safety Campaigns in the NE Region should focus on

- Motorcycles under 125cc in urban areas all the year round
- Motorcycle riders aged between 16 and 24
- Motorcycles over 125cc between March and September
- Awareness raising for car drivers, particularly around junctions.
- Driver / Rider skills training