



Reworking Road Casualty Statistics in Great Britain by the Motorcycle Action Group UK

On March 9th the AA Trust's press release on the latest Eurorap report (www.eurorap.org) carried the following text

“A ‘mini massacre’ of motorcyclists on some rural main roads continues to undermine significant safety improvements. The impact of motorcycling is such that the most high-risk road listed – the A537, Buxton-Macclesfield – would be among Britain’s safer roads if there were no motorcycle accidents.

On page six of the Eurorap report the AA Trust indicates that,

“On 19 per cent of the 850 road sections studied, at least a third of all fatal and serious collisions involved motorcyclists. This figure shows that the problem is widespread. It critically highlights the fact that stopping wilfully dangerous biking behaviour on just a few higher-risk roads will not significantly reduce motorcyclist casualties”.

However, the AA Trust Eurorap analysed 850 selected roads out of a total of 392,321 roads in Great Britain. Furthermore, 19% of 850 roads is only 0.04% or 161 of all roads and the statement that “at least one third of all fatal and serious collisions involved motorcycles (on these 161 roads)”, is highly contentious apart from being seriously subject to sample error. In the first instance, there is no breakdown of fatalities or serious injuries and secondly there is no explanation relating to the types of collisions. For example, were these collisions with other vehicles or collisions with trees or road furniture? In other words, this statement is misleading and what it seems to imply is that the motorcyclist is to blame for causing a third of collisions in this country.

The report “The Accident Risk of Motorcyclists” published by the TRL in August 2004 states “The data analysis showed that trends in casualties can be broadly explained in terms of changes in numbers and sizes of motorcycles and the mileage they cover. The KSI casualty rate per 100m vehicle kms has been fairly stable over the past ten years, with a tendency to decline in the most recent years, but is still 30 times higher than that for car occupants”. The use of KSI (Killed and Seriously Injured) figures is also highly contentious. The reason for this can be identified in the Department for Transport’s Road Casualties 2003 report. It is important to consider the comments made in the preface of the DfT report on road casualties:

“... readers should note that while very few, if any, fatal accidents do not become known to the police, there is evidence that an appreciable proportion of non-fatal injury accidents are not reported to the police and thus are not included in this publication. In addition research has shown that up to a fifth of casualties reported to the police are not included in the statistical return”.

However, irrespective of the previous statement it is also common knowledge amongst traffic police that it is ultimately the tick in the accident report box that counts and nothing else and that is down to the officers' perception as to the seriousness of the accident.

In response to the issue of PTW accident statistics, one needs to consider that safety reports are ultimately both a reflection of research and opinion, in the sense that these data have been socially constructed and are therefore in part, a reflection of the person or people involved in their construction. In other words existing data are as much social construction as they are records or measures that the researcher wishes to know about. Thus the researcher needs to consider the purpose for which the existing data were originally intended:

- Were they generated for research purposes, or for some other purpose?
- If they were generated for research purposes, how close a match is there with the researcher's own agenda?
- If the data were not generated for research purposes, were they generated as an incidental by-product of some administrative process, or were they constructed as a source of information aimed at a specific audience?

(Pole and Lampard 2002¹)

MAG replies

In the endeavour of government and research institutes to find solutions for accidents and injuries on our roads, there is an ever increasing move towards more social control and the use of technology as a panacea for driver/rider behaviour. However, there are many sociological elements that are overlooked. Therefore, in order to offer a more balanced perspective on accident statistics, MAG has analysed the Road Casualties 2003 report by the DfT and reworked casualty data by separating fatalities and serious injuries and giving more focus to collisions and all vulnerable road users. More importantly, by comparing casualties for road users by using injuries as a base line, not 100m vehicle kms as used in the TRL study, nor registered vehicles in circulation as used in the DfT report, it is possible to get a more realistic comparison in terms of risk and vulnerability.

Data in the DfT report on collisions with other road users highlights that 38% of fatal PTW accidents are due to collision with cars while 43% of PTW serious injuries are due to collisions with cars. By combining serious injuries² from fatal accidents and serious accidents and comparing them to the total of serious injuries from ALL accidents including slight accidents, (ref. Table 39 from DfT Road Casualties 2003³) the data show that serious injuries are proportionately less than 3 times higher (24.5%) for PTWs than for cars (8.2%).

¹ Pole C and Lampard R (2002:) Practical Social Investigation, Prentice Hall

² This might seem confusing but what it means is that the DfT have separate columns in which they define three types of accidents – fatal, serious and slight and within the definitions of fatal, serious and slight accidents there are sub groups for type of injuries. The reason for this presumably is that in any one accident there may be more than one injury of a different nature.

³ www.dft.gov.uk

Table One: Serious injuries for Great Britain 2003

	Serious Injuries	Total accidents
PTWs	6,959	28,411
Serious Injuries as % of total accidents = 24.5%		
	serious	Total accidents
Cars	15,278	184,909
Serious Injuries as % of total accidents = 8.2%		

Fatalities for PTWs are 2.4% of total PTW injuries compared to 0.96% fatalities of total car injuries. This method suggests that PTW fatalities are less than 2 times (1.8%) higher than car fatalities and NOT the 30 times higher suggested in the TRL report.

Table Two: Fatalities for Great Britain 2003

	Fatalities	Total accidents
PTWs	693	28,411
Fatalities as % of total accidents = 2.4%		
	Fatalities	Total accidents
Cars	1,769	184,909
Fatalities as % of total accidents = 0.96%		

In the following two tables, the data identify the number of fatalities and severe casualties (with the caveat highlighted previously as to the validity of the data relating to the severity of the injuries). We have reworked the casualty data by including occupants of the vehicles rather than just the driver or rider. Also included are pedestrians, the reason for which will become apparent later. The parc (or registered vehicles in circulation) data used are those issued by industry and are considered to be more reliable than the data used by the DfT.

Table Three: DfT Road Casualties Great Britain 2003 Fatalities - Ref: Table 39

	Drivers	Passengers	Total	Proportion of parc
PTWs	665	28	693	0.05
Cars	1,169	600	1,769	0.01
Light Comm Vehicles	50	22	72	0.02
Trucks & Buses	43	12	55	0.01
Bicycles	114	0	114	n/a
Pedestrians	774	0	774	

*PTW parc c.1.5mill; Car Parc c.29mill; Light Comm. Vehicles c.3mill; HGV % Buses c.0.5mill. (Ref: SMMT Motorparc 2003); In 2003, MCIA parc statistics for PTWs were 1.314 million however these do not include off road PTWs nor untaxed PTWs which are estimated by the DVLA at c.14% of parc.

Table Four: DfT Road Casualties Great Britain 2003 Serious Injuries - Ref: Table 39

	Drivers	Passengers	Total	Proportion of parc
PTWs	6,572	362	6,934	0.5
Cars	9,778	5,500	15,278	0.05
Light Comm Vehicles	521	173	694	0.02
Trucks & Buses	368	498	866	0.2
pedestrians	7,159			
bicycles	2,297			

NB: Serious injuries combine casualties of fatal accidents (which included serious injuries) + serious accidents. PTW parc c.1.5mill; Car Parc c.29mill; Light Comm; Vehicles c.3mill; HGV % Buses c.0.5mill.

The following two tables are possibly the most important and relevant in the search for answers to the high number of casualties for vulnerable road users and the causation of injuries and fatalities of these road users.

It is evident that car drivers have an enormous burden of responsibility for the death and serious injuries of more vulnerable road users. It is ironic that safety reports continue to identify motorcycles as “dangerous” machines, but as stated previously, c.40% of all deaths and severe injuries to riders are caused by cars and as the following tables demonstrate, it is very apparent that statements about dangerous motorcycles are misleading.

Of all 1,310 fatalities involving collisions with other road users, 1,300 involved cars with cars and with more vulnerable road users. Of those 773 or 60% of the 1,300, were collisions between cars and more vulnerable road users.

Table Five: Collisions involving cars and PTWs 2003

Vehicle involvement 2003			
Fatalities involving collisions with cars		Fatalities involving collisions with PTWs	
car/ptw	263	ptw/ptw	10
car/ped.	449	ptw/ped.	5
car/bicycle	61	ptw/bicycle	0
car/car	527		
car/van	4	ptw/van	0
car/hgv-bus	6	ptw/hgv-bus	1
Total Deaths	1,310		16

NB car/ptw collisions represent 38% of all ptw fatalities involving another vehicle

The total number of collisions resulting in serious injuries was 18,015 of which 17,626 involved cars with cars as well as cars with more vulnerable road users. 11,079 or 63% of those were collisions between cars and more vulnerable road users.

Contrary to comments made by police recently that PTWs have high levels of collisions with other road users, the data above identify five deaths of pedestrians caused by PTW users compared to 449 caused by cars – in other words, pedestrians are 100 times *less* likely to be killed by a PTW than by a car. There were no cyclist fatalities caused by PTWs in 2003, while 61 were killed by cars.

Table Six: Collisions involving cars and PTWs 2003

Vehicle involvement 2003			
Serious injuries involving collisions with cars		Serious injuries involving collisions with PTWs	
car/ptw	3,890	ptw/ptw	147
car/ped.	5,468	ptw/ped.	285
car/bicycle	1,721	ptw/bicycle	41
car/car	6,547		
car/van	219	ptw/van	3
car/hgv-bus	170	ptw/hgv-bus	5
Total Serious Injuries	18,015		481

NB: PTW data combine moped and motorcycle data from Table 23

NB car/ptw collisions represent 43% of ptw serious injuries involving another vehicle

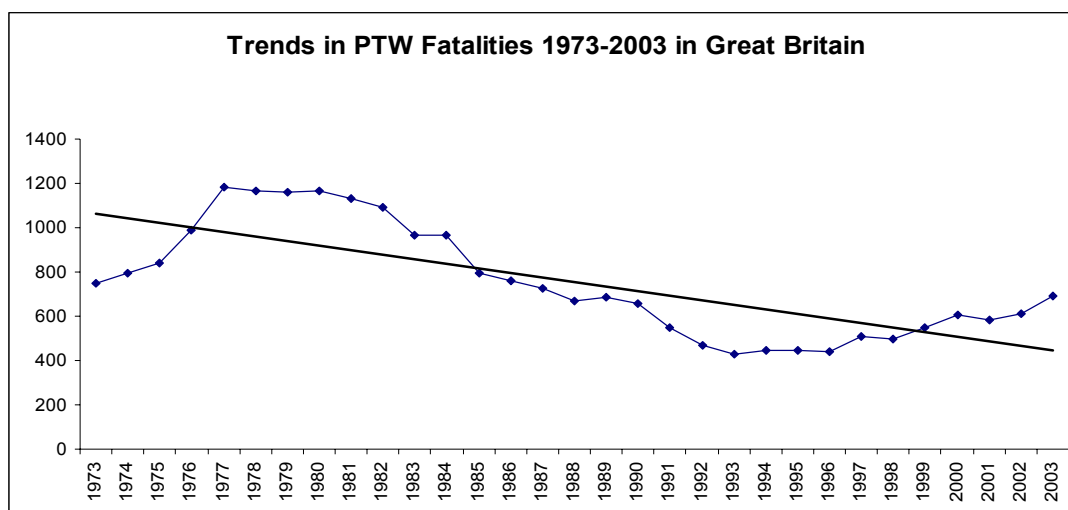
While there is a need to address problems relating to road engineering and road furniture (ref. the recently published IHIE report⁴) as well as attitude and behaviour with regards to single vehicle PTW fatalities, it is apparent that there is a very real problem relating to collisions with heavier vehicles for pedestrians, cyclists and PTWs alike.

However, as highlighted in the Eurorap report, there appears to be far more emphasis placed on motorcyclists being responsible for injuries not only to themselves but to other road users. With all the caveats relating to serious injury reports as highlighted at the beginning of this paper, the data above identify 326 serious injuries for pedestrians and cyclists⁵ due to collisions with PTW users compared to 7,189 collisions with cars. This means that PTWs are 20 times *less* likely to cause serious injuries to pedestrians and 42 times *less* likely to cause serious injuries to cyclists than cars.

Pedestrians are vulnerable to vehicles of all types, in fact there were 774 pedestrians killed in 2003 of which 449 (58%) were killed by cars compared to five by PTWs. Serious injuries for pedestrians were 7,159 in total, of which 5,468 (76%) were injured by cars compared to 285 by PTWs. There were 6,934 PTW serious injuries of which 3,890 (56%) were due to collisions with cars.

It follows that if car drivers are the most singular cause of fatalities and serious injuries to other road users, then in order to understand whether there are reasonable concerns about the potential dangers of two wheeled transport and to determine whether PTW fatalities have increased or decreased, it is useful to examine long term trends for PTW fatalities. This is possibly the most important yardstick – simply because fatalities are the only reliable data available for the obvious reason.

Graph One: Historical PTW accident data - Total fatalities per year 1973 – 2003



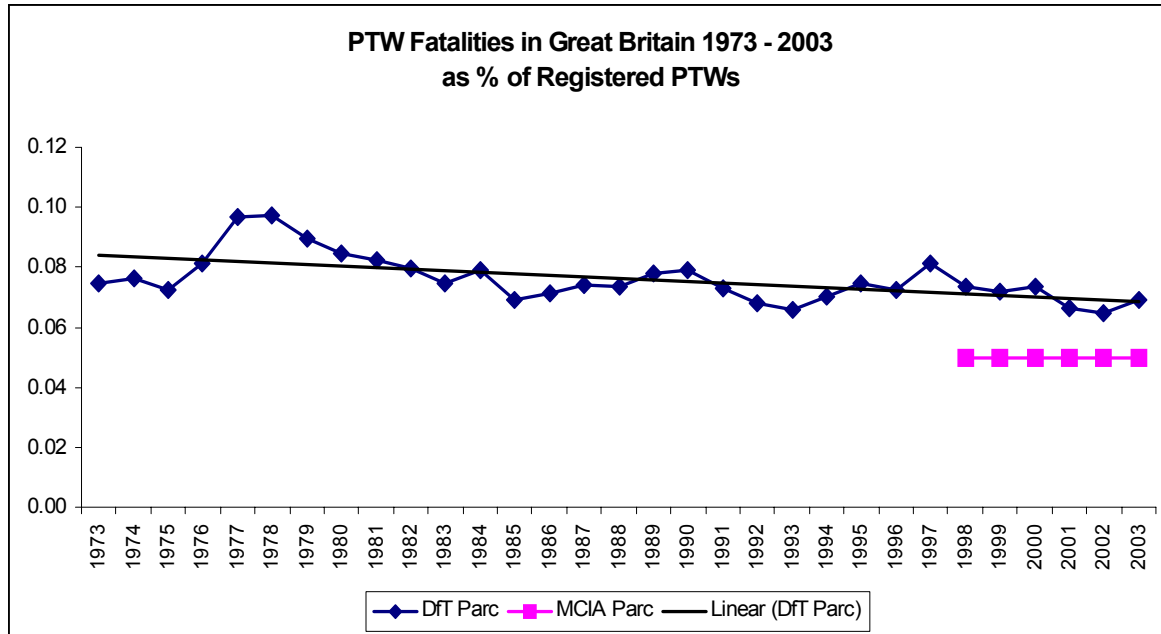
Source: Road Casualties in Great Britain 2003 taken from the DfT report page 54 table 2

⁴ www.ihie.org.uk

⁵There is a more complex discussion relating to cyclists, but that requires more specific focus which may detract from the discussion at hand, so the data relating to cyclist casualties will not be analysed in this paper.

The statistics for the fatalities highlighted in Graph One are absolute figures. In other words they are total fatalities for each year from 1973 to 2003. In order to assess whether there has been any real change in fatalities over the years, it is helpful to use a base to determine whether there have been any relative changes. In other words whether there has been any increase or decrease in fatalities in real terms. In order to do this, fatalities from 1973 to 2003 have been compared to parc or registered PTWs on the road, (bearing in mind the inaccuracy of the DfT parc data, which will be discussed later).

Graph Two: Historical PTW accident data - Fatalities per year as a % of Registered PTWs



Source: Road Casualties in Great Britain 2003) taken from the DfT report page 54 table 2 (Linear = trend line)

The comparison of absolute and relative data is useful for two reasons. Firstly it suggests that there was a substantial increase in PTW fatalities between 1973 and 1979 in both graphs, which is somewhat ironic considering that this increase followed the introduction of the helmet legislation in 1973. Secondly, what is evident from the trend line in both graphs is that there has been a consistent decrease of PTW fatalities from 1979 through to 2003. In fact over the last 20 years (between 1983 and 2003) fatalities have averaged 0.07% of parc (ref. DfT data).

In response to the claims of increased fatalities for PTW riders in recent years, the first graph using absolute figures shows that commencing in 1998 there was a rise in PTW fatalities, from 498 in 1998 rising to 693 in 2003. However the second graph using relative figures, suggests there has been very little change at all.

It has long been the contention of the automotive and motorcycle industry that data used by the DfT which relate to registered vehicles on the road (or vehicle stock as the DfT prefer to call it) are questionable. The Society of Manufacturers and Motor Traders (SMMT) release annual figures for the car industry, as does the Motorcycle Industry Association (MCIA) for the motorcycle industry.

As demonstrated in the previous graph and presented again in the following table, there is a difference in relative fatalities between the DfT data and the MCIA data. In fact by using MCIA data as the baseline for each year from 1998 through to 2003, fatalities have remained consistently 0.05% (data from the MCIA for PTW parc prior to 1998 are not available).

Table Seven: Fatalities as a proportion of PTW Parc

	Fatalities	PTW Parc (MCIA)	%
1998	498	1,015,500	0.05
1999	547	1,041,200	0.05
2000	605	1,157,700	0.05
2001	583	1,212,000	0.05
2002	609	1,256,400	0.05
2003	693	1,314,000	0.05

The data in the following table give an example of the differences between the MCIA data and the DfT data for PTW parc. The variations of the data range from -33.2% to -23.5% for DfT data compared to the MCIA data.

Table Eight: Comparison of PTW Parc data in Great Britain

	MCIA PTW parc (000)	DfT PTW parc(000)	Variation (000)	% (+/-) difference
1998	1,016	678	338	-33.2
1999	1,041	760	281	-27.0
2000	1,158	825	333	-28.7
2001	1,212	882	330	-27.2
2002	1,256	941	315	-25.1
2003	1,314	1005	309	-23.5

In consideration of the fact that accident data and comparisons between road users such as cars and PTWs in the DfT report are based on questionable parc statistics, making any assessment regarding rates of risk for motorcycle casualties are extremely tenuous.

Conclusions

What is apparent is that there is a fundamental problem with the analysis of data relating to casualties and the danger of this is that what ever group or person with the loudest voice and the most power can manipulate the outcome of any research for a specific agenda.

This critique of government statistics is long overdue, we believe that it is time for change. There have recently been initiatives to move the goal posts towards a more realistic analysis of two wheeled transport. MAG is at the heart of the safety debate and advocates the promotion of measures to encourage safe and responsible road use through a better motorcycling environment.

In February 2004 the Federation of European Motorcyclists Association (FEMA) published its “European Agenda for Motorcycle Safety”. The twenty two national riders’ organisations in

Europe, represented by FEMA recognised that motorcyclists have a "Shared Responsibility" in reducing motorcycle accidents and therefore were willing to accept that responsibility and take an active part.

The motorcycle community has been working closely with government agencies and departments through the Advisory Group on Motorcycling and its various task forces on vehicle safety and security, integration and traffic management, environmental and fiscal issues, statistics, and research.

The advisory group published its final report to government in August 2004. The report contained sixteen suggestions and thirty eight recommendations which put the main emphasis on motorcycling accepting the blame for accidents and thus offering solutions to reduce motorcycle casualties and accidents.

It was recognised "That as a high proportion of motorcycle accidents are caused by other road users, the Advisory Group calls for more emphasis on raising the awareness of all road users about motorcyclists through the Highway Code, publicity campaigns, the driving test and enforcement."

The final report was successful in its aim to assist the Government in further developing its policy and strategy on motorcycling, with the publication of the "Governments Motorcycle Strategy" in February 2005.

In the foreword of the strategy, the then Transport Minister David Jamieson stated that, "Together we can take forward this sensible, practical and deliverable package of measures to make a positive difference for motorcycling, and make sure that motorcycling takes its proper place in the transport mainstream as a safe, affordable means of transport." The motorcycle strategy contains thirty four action points to be carried through over periods of two to five years with some of these points already being implemented or in progress.

As alluded to previously in this document, the Institute of Highways Incorporated Engineers (IHIE) published its "Motorcycle Guide Lines - improving safety through engineering and integration" in April 2005. Drawing on the combined expertise of engineers, road safety officers and motorcyclists, the purpose of the guidelines is to demonstrate the role that motorcycling can play in an integrated transport system and to assist highway and traffic engineers in delivering a safer and more motorcycle-friendly road environment.

Legislation to reduce accidents and casualties is never far away. With specific reference to motorcycles, the Second European Driving Licence will be introduced in the UK in 2008 and will see changes in the motorcycle test. The on road practical test will have an "off road" section, with testing and manoeuvring skills, including a swerve and brake exercise.

The draft Third European Driving Licence Directive aims to create a safer testing regime for riders and harmonize motorcycle driving licences in Europe. But riders could face a hodgepodge of differing age limits to the licence structure and this may deny riders the right balance between safety, mobility and access to Powered-Two Wheelers while at the same time, failing to address the real issues of motorcycle safety.

The police led initiative Bikesafe offers a practical on road assessment to riders. The overall aim of Bikesafe is to pass on the knowledge, skills and experience of police officers to riders in order for them to have more enjoyment from their motorcycle, in a safe way. This scheme is an introduction to onward training from organisations such as the IAM, RoSPA and other training schools offering advanced training.

As a Riders' Rights organisation, MAG has a real interest in the future of motorcycling and the freedom to ride. MAG believes that there are fundamental issues concerning behaviour and attitude that need addressing and that this is specifically related to the lack of training not only for of young car drivers but also for young PTW riders. Training and testing are not the same. A test is a one off event and demands basic skills, training implies progression and the development of skills.

MAG accepts that fatal and serious accidents are tragic and that driver/rider behaviour needs serious consideration in order to prevent further carnage, but is also of the view that educating the public could easily be achieved by starting with the young through teaching road awareness in schools - including how to drive cars, ride mopeds, scooters or motorcycles – which could become part of a curriculum. Clearly, this is a medium, long term solution, but one which would ensure that when the time comes, the young people of our country would be capable of joining the rest of society as responsible road-wise drivers and riders rather than restricting them and praising them just for surviving.

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