

Powered Two Wheelers (PTWs) (Mopeds, motor scooters and motor cycles)

THIS BRIEFING COVERS

Common ground between motorcyclists and cyclists; the direct effects of motorcycling on cycling, walking, emissions and noise; motorcycles in bus lanes and advanced stop lines.

HEADLINE MESSAGES

- As vulnerable road users, cyclists and motorcyclists share much common ground.
- However, Cycling UK is concerned that cyclists and pedestrians are more at risk from motorcycles than they are from cars, so we object to moves to allow motorcycles to share cycle facilities such as Advanced Stop Lines (ASLs) at junctions
- We are also concerned about the impact that more motorcycling could have on the environment.
- We therefore support policies to improve motorcyclists' safety but, given the need to restrain motor traffic in general, we do not support actions intended to increase the use of motorcycles, or actions that might have this effect.

KEY FACTS

- In 2013 (GB), motorcyclists were 60 times more likely to be killed per billion miles than car occupants, and 3.5 times more likely than cyclists.
- For every mile they travel, PTWs are more likely than a car to kill a cyclist. From 2009-13, cars accounted for 78% of GB traffic on average per year, and were involved in 58% of cyclist deaths, whereas PTWs accounted for 1% of traffic, but were involved in 2% of cyclist deaths.
- In 2013, on 30 mph roads in built up areas, nearly half of all motorcycles exceeded the speed limit, 21% by 5 mph or more.
- Many pollutants from Britain's PTW fleet are worse (some considerably worse) than they are for cars.
- In 2013, larger licenced PTWs (over 600cc) made up 41.6% of Great Britain's PTW fleet, up from 35.7% in 2004.
- In urban areas, less than 10% of motorcyclist casualties (killed and serious) in urban areas happen at signalised junctions – in fact, motorcyclists are more likely to be killed on rural than on urban roads.



Cycling UK VIEW

- Cycling UK recognises that motorcyclists and cyclists share a number of road safety problems, but is concerned that cyclists and pedestrians are more at risk from PTWs than they are from cars.
- National and local motorcycling policies should be informed by a comprehensive, Government-led assessment of the effects that a greater take-up of motorcycling might have. This should look at its impact on:
 - the safety (both actual and perceived) of (would-be) pedestrians and cyclists
 - the promotion and attractiveness of the cleaner, healthier, quieter and more sustainable alternatives of walking and cycling
 - the environment (pollutants and noise)
 - congestion
- PTWs should not be allowed in bus lanes, advanced stop lines (ASLs), vehicle-restricted areas or locations where pedal cycles enjoy exemptions from vehicle restrictions. This must necessarily apply to all PTWs, as larger, faster and more polluting machines make up a large proportion of the PTW fleet and it is not practical to provide traffic regulation benefits for the safest and cleanest machines alone.

BACKGROUND INFORMATION

1. Common ground

Cycling UK view: Cycling UK recognises that motorcyclists and cyclists share a number of road safety problems.

- Both cyclists and motorcyclists share the need for safe road conditions. In fact, motorcycling is much riskier than cycling and, indeed, has the highest fatality rate per billion vehicle miles of any type of road user – in 2013, around 60 times that for car occupants (38 in 2012), and 3.5 times the rate for pedal cyclists:

Source: DfT *Reported Road Casualties GB 2013*, Table RAS30070.¹

Relative risk of different forms of transport, Great Britain: 2013		
Casualty rate per billion vehicle miles		
	Killed	Killed or seriously injured
Car driver	2	24
Pedestrian	34	463
Pedal cyclist	34	1,036
Motorcycle rider	119	1,853

- Cyclists and motorcyclists share a number of concerns, e.g.:
 - *Road defects:* compared with motor vehicles (particularly HGVs), cycles and motorcycles cause very little wear on the roads, yet they are disproportionately affected by poor maintenance, e.g. potholes, mis-laid manhole covers, slippery surfaces (e.g. in winter), debris etc.
 - *Sudden road narrowings:* these create conflict with four-wheeled vehicles.
 - *Drivers 'looking, but failing to see':* this tendency puts cyclists and motorcyclists at risk, particularly at junctions, side roads etc.
- 6% out of the 2,300 Cycling UK members who responded to our 2013 membership survey said that they owned a motorcycle.



2. The direct effects of motorcycling on cycling and walking, emissions and noise

Cycling UK view:

National and local motorcycling policies should be informed by a comprehensive, Government-led assessment of the effects that a greater take-up of motorcycling might have. This should look its impact on:

- the safety (both actual and perceived) of (would-be) pedestrians and cyclists
- the promotion and attractiveness of the cleaner, healthier, quieter and more sustainable alternatives of walking and cycling
- the environment (pollutants and noise)
- congestion

It is important to ensure that all policy decisions relating to transport do not undermine the health, safety and congestion-reduction benefits of walking and cycling, together with the positive contributions they make to the quality of life. Apart from the need for motorcycling policy to reflect the danger that PTWs pose to pedestrians and cyclists (see below), it also needs to take account of:

- The risk that increased PTW use might put people off walking and cycling
- The inevitable fact that increasing the attractiveness of one mode is bound to reduce the relative attractiveness of other modes, including more sustainable alternatives.

a. Collisions with cyclists and pedestrians

- For every mile they travel, PTWs are more likely than a car to kill a cyclist. According to the DfT, from 2009-13, cars accounted for 78% of traffic in Great Britain on average per year, and were involved in 58% of cyclist deaths, whereas PTWs accounted for 1% of traffic, but were involved in 2% of cyclist deaths.²
- For pedestrians, PTWs compare even more unfavourably: per mile travelled on urban roads in Great Britain (exc. motorways), motorcycles* are about 2.9 times as likely as cars to be involved in collisions that cause serious injury to pedestrians, and 3.3 times as likely to be involved in killing them.

*Includes motorcycles both under and over 50cc.

Source: DfT: *Reported Road Casualties Great Britain / Traffic Estimates (2009-2013)*³

Ratio of PTW:car involvement in cyclist & pedestrian casualties, per mile travelled by vehicle on non-motorways 2009-13		
Injury type	Urban roads	Rural roads
Pedestrians		
Fatal	3.3	1.8
Serious	2.9	2.5
Cyclists		
Fatal	1.2	3.0
Serious	1.0	2.0

Research, education and enforcement, of course, have a role to play in improving this record.



b. Speed

In 2013, 47% of all motorcycles observed travelling on 30 mph speed limit in built-up areas exceeded the speed limit; and 21% exceeded it by 5 mph or more. ⁴

c. Emissions/pollutants

PTWs are not a 'green' mode of transport: DfT data show that in 2012 for many pollutants, emissions from Britain's PTW fleet are worse (some considerably worse) than they are for cars.

Per passenger mile, PTW emission are even higher when compared to cars given that the average occupancy of a car is 1.57⁵ and that motorcycles tend mostly to carry just one rider.

PTW emissions relative to cars (2012)	
Carbon monoxide	6.6
Nitrogen oxides	0.5
Benzene	9.2
1,3-butadiene	6.3
Particulates, PM10	1.2
Particulates, PM2.5	1.2

Source: DfT: *Transport Statistics Great Britain 2013* ⁶

European progressive emissions enforcement, however, has allowed motorcycles to lag behind cars for a number of years due to the greater technical challenges involved. Progress is being made, but motorcycles will never be the 'green' substitute for the car that cycles are.

Carbon dioxide: For CO₂, the emissions rate per vehicle-mile for PTWs in 2012 was lower than for cars: cars emitted 0.26 million tonnes per billion vehicle miles travelled, while PTWs emitted 0.19 million tonnes per billion miles travelled.⁷

However, this better performance in terms of a main greenhouse gas needs to be seen in the context of the environmental disadvantages listed above, and the risk that more motorcycling may undermine efforts to encourage greater uptake of the far greener alternatives of walking and cycling. Also, the Government's *Motorcycling Strategy*⁸ published in 2005 noted that, whilst smaller PTWs have low CO₂ emissions rates, poor fuel economy often makes larger machines worse than some cars in this respect.

Note: The calculations in the above tables are based on the emissions for which all cars/PTWs are responsible. There is, of course (as the Government's comment on CO₂ indicates) a broad spectrum of vehicles – some are relatively 'clean' in comparison with others. However, in the absence of practical and enforceable ways to favour only the safest and least polluting PTWs, traffic regulation has to treat them as a single vehicle class.

In fact, figures show that the proportion of larger licenced PTWs in Britain (i.e. those over 600cc) has been rising: in 2013 they comprised 41.6% of the fleet, up from 35.7% in 2004;⁹ and, according to Transport for London: "The composition of the motorcycle fleet in the Capital is also changing towards larger bikes. Between 2000 and 2010, the proportion of new motorcycle sales accounted for by scooters decreased from 59 to 47 per cent."¹⁰ It makes little sense to advocate measures to promote motorcycling if it encourages the use of the largest and most environmentally damaging PTWs as well as the smallest and cleanest.

d. Noise

In recent years motorcycle noise has been tackled effectively by legislation. According to the revised action plan for the Government's 2005 *Motorcycling Strategy*, "Motorcycles sold in the European Union are required to conform to international regulations on maximum noise emission that are quite adequate to avoid public nuisance from unmodified motorcycles. Public irritation with motorcycle noise almost exclusively comes from motorcycles which have been fitted, after the point of sale, with aftermarket systems designed for off road use. The use of these systems on the public road contravenes existing legislation."¹¹

e. Congestion - see section below.

3. Exemptions to traffic rules

a. PTWs in bus lanes and Advanced Stop Lines (ASLs)

Cycling UK view: PTWs should not be allowed in bus lanes, advanced stop lines (ASLs), vehicle-restricted areas or locations where pedal cycles enjoy exemptions from vehicle restrictions. This must necessarily apply to all PTWs, as larger, faster and more polluting machines make up a large proportion of the PTW fleet and it is not practical to provide traffic regulation benefits for the safest and cleanest machines alone.

- **It is unlikely to make *motorcycling* safer:**

It is often suggested that allowing PTWs into bus lanes and cyclists' ASLs would make motorcycling safer, but this is debatable:

ASLs: the majority of PTW fatalities occur at locations where allowing them into ASLs would not be relevant to their safety:

- Motorcyclists are more likely to be involved in fatal crashes on rural roads than on urban road. Also, there is little difference to the rate of KSI (killed or seriously injured) between rural and urban roads (although for all severities – i.e. when slight injuries are taken into account, the risk is greater on urban roads).¹²

Motorcycle involvement rate in reported crashes per billion vehicle miles (GB, 2013)		
	All urban roads	All rural roads
Fatal	84	198
Fatal or serious	2242	2143
All severities	10266	5223

Source: DfT. *Reported Road Casualties Great Britain 2013*.

- Even for those motorcyclist casualties that occur in urban areas, only a relatively small percentage takes place at signalised junctions (8.9% of fatalities and 9.4% of serious casualties in 2003, according to a parliamentary answer).¹³



Bus lanes: a TRL report¹⁴ on Transport for London's experimental scheme that allowed motorcycles into bus lanes found that "motorcyclists appear to be less safe since the scheme has been introduced."

- **It is likely to increase the hazards/intimidation experienced by cyclists & pedestrians:**

Opening up bus and cycle facilities to PTWs may encourage more people to take up motorcycling. As a result, the safety of pedestrians and cyclists could deteriorate more generally, given the risk PTWs pose to them (see section 2a). PTW acceleration speeds, for example, may compromise the safety of slower ASL users.

Bus lanes and cyclist/pedestrian safety: A number of trials have attempted to monitor the effect of allowing PTWs to use bus lanes, but their limited extent means that it is difficult to come to any firm conclusions about their impact on the safety of cyclists and pedestrians: while they have not found any clear drawbacks, they have not shown any clear safety benefits either. Whether such schemes put people off cycling is equally unclear.

Following experimental orders, a number of authorities¹⁵ have, however, allowed motorcycles to use bus lanes on a permanent basis.

For more on the decision to give motorcycles permanent access to bus lanes on most of London's red routes from 23 January 2012 (a decision to which Cycling UK objected), see: www.tfl.gov.uk/modes/driving/red-routes/rules-of-red-routes/bus-lanes/motorcycles-in-bus-lanes

- **It is unlikely to ease congestion:**

The Government's 2005 *Motorcycling Strategy*¹⁶ acknowledged that it was far from clear if more motorcycling would help ease congestion. A motorbike may be a good way to get through traffic jams, but replacing the cars on a congested road with motorbikes would not necessarily help more people to get through junctions – a motorcycle's space 'envelope' is not much less than a car's and on average each carries fewer occupants (in 2013, 1.57 people travelled on average in each car, while each PTW carried an average of 1.13 riders¹⁷).

Furthermore, research commissioned by the DfT also showed that allowing motorcycles to use bus lanes led to an 18% increase in motorcycle kilometres on urban single carriage roads, plus an overall increase in lost time due to delays.¹⁸

b. Vehicle-restricted areas (VRAs) / exemptions from motor vehicle restrictions

Cyclists benefit significantly from being allowed into VRAs and from being exempt from restrictions that apply to other vehicles. This helps make town and city centres more accessible for them, creates an advantage for benign modes of travel, and enhances the environment not just for cyclists and pedestrians, but also for the local community. Extending such exemptions to motorcycles would undermine this effect.



POLICY BACKGROUND

- **The Government's Motorcycling Strategy (2005 – England only)**

As mentioned above, cyclists and motorcyclists share the need for safer road conditions, so it was good to see that the 2005 Strategy (not yet superseded) attempted to address the vulnerability of motorcyclists in detail. It failed, however, to cover the impacts that a greater take-up of the mode could have on other vulnerable road users and, although it acknowledged the potential problems, it was unjustifiably positive about allowing highway authorities to admit motorcycles into bus lanes and ASLs.

In the light of Cycling UK's reservations about the environmental impacts of motorcycling (see above), we were concerned to read: "The benefits of motorcycling are recognised by Government" and that its principal aim is to "mainstream" motorcycling. This latter statement was something that the Transport Select Committee asked the Minister to explain during its inquiry into the Strategy later in the same year. From the answers it received, the Committee concluded that this premise appeared "... to mutate into a commitment to encourage motorcycling."¹⁹ In its response²⁰, the Government said that its aim was indeed to mainstream motorcycling "...so that all organisations involved in the development and implementation of transport policy recognise that motorcycling can be a modern, practical way of getting around."

At least the Strategy's action plan asked manufacturers to "promote the benefits of the environmentally better performing bikes, as well as continuing to improve emissions performance." Its revised action plan (2008) also committed the DfT to carry out further trials to assess the effects of allowing motorcycles into ASLs before making any decisions.

- **Motorcycles in Bus Lanes (TAL 2/07)²¹**

Cycling UK considered this guidance to be a retrograde step because it said that it "...removes the presumption against allowing motorcycles access to bus lanes in Local Transport Note 1/97 ['Keep Buses Moving']", based on the evidence provided so far. This enables local authorities to decide for themselves whether or not to allow motorcycle access to bus lanes."

On the positive side, the guidance does include a section on cycle safety (and a much better section on pedestrian safety), and a whole section suggesting that new schemes should be monitored, including the use of video recordings and user questionnaires, both of which should cover pedestrians and cyclists. The TAL also states that, "Any potential conflict between motorcycles and pedal cycles should be considered" and that policy considerations should include the "effect on other vulnerable road users, especially pedestrians and cyclists."

Additionally, it notes that buses may not be able to pass cyclists safely on narrow, 3m bus lanes without encroaching into the general traffic lane. The leaflet goes on to state that the introduction of motorcycles into such lanes with a high bus flow rate "could make the situation worse and increase the possibility of a motorcyclist moving into the general traffic lane to pass a bus, thus increasing the potential for conflict."



FURTHER READING

- *The Government's Motorcycling Strategy*. Department for Transport (DfT). (February 2005). <http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/roads/vehicles/motorcycling/thegovernmentsmotorcyclingst4550>
- *The Government's Motorcycling Strategy. Fifth Report of Session 2006-07*. TSO. House of Commons Transport Committee. (March 2007). www.publications.parliament.uk/pa/cm200607/cmselect/cmtran/264/264.pdf
- *Motorcycles in Bus Lanes – TAL 2/07* (DfT, 2007). <http://webarchive.nationalarchives.gov.uk/20120606202850/http://assets.dft.gov.uk/publications/tal-2-07/tal-2-07.pdf>
- *Motorcycle Safety Action Plan*. Transport for London. March 2014. www.tfl.gov.uk/cdn/static/cms/documents/motorcycle-safety-action-plan.pdf

FOOTNOTES AND REFERENCES

¹ DfT. *Reported Road Casualties Great Britain 2013*. Sept 2014.

www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013

² DfT. *Focus on Pedal Cyclists 2013*. Sept 2014. (P8).

www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013

³ Sources used for calculations:

- Casualty figures from *Reported Road Casualties Great Britain* annual reports, 2009-13: 2009 Tables 23a (urban) & 23b (rural); 2010-13 Table RAS40004. www.gov.uk/government/collections/road-accidents-and-safety-statistics.

- Traffic estimates from *Transport Statistics Great Britain 2014*. Dec. 2013. Table TRA0104 www.gov.uk/government/statistics/transport-statistics-great-britain-2014

⁴ DfT. *Free flow vehicle speeds in Great Britain 2013*. June 2014. Table SPE0102

www.gov.uk/government/collections/speeds-statistics

⁵ DfT. *National Travel Survey*. July 2014. Table NTS 0905. www.gov.uk/government/statistics/national-travel-survey-2013

⁶ Calculated from:

- Emission figures from DfT *Transport Statistics Great Britain: 2014*. (TSGB). Dec. 2014. Pollutants, Table ENV0301 (TSGB0308); Carbon dioxide, Table ENV 0202 (TSGB0307)

www.gov.uk/government/statistics/transport-statistics-great-britain-2014

- Traffic estimates (billion vehicle miles by vehicle type) from DfT TSGB 2014. Table TRA0104 (link above) www.gov.uk/government/statistical-data-sets/nts09-vehicle-mileage-and-occupancy

⁷ DfT *Transport Statistics Great Britain: 2014*. (TSGB). Dec. 2014. Table ENV0202.

www.gov.uk/government/statistics/transport-statistics-great-britain-2014

⁸ DfT. *The Government's Motorcycling Strategy*, (2005). Para 3.4: "However, larger motorcycles can emit more CO2 than some cars kilometre by kilometre because they offer far poorer fuel economy."

<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/roads/vehicles/motorcycling/thegovernmentsmotorcyclingst4550>

⁹ DfT. *Motorcycles*. Dec 2014. Table VEH 0306. www.gov.uk/government/statistical-data-sets/veh03#history

¹⁰ TfL. *Motorcycle Safety Action Plan*. March 2014.

www.tfl.gov.uk/cdn/static/cms/documents/motorcycle-safety-action-plan.pdf

¹¹ DfT. *The Government's Motorcycling Strategy: the revised action plan* (2008). P11.

webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/roads/vehicles/motorcycling/motorcyclingstrategyrevised.pdf

¹² DfT. *Reported Road Casualties Great Britain 2013*. Sept 2014. Table RAS 20005.

<https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013>

¹³ Written parliamentary answer to a question by Rob Maris MP, 16th March 2005.

www.publications.parliament.uk/pa/cm200405/cmhansrd/vo050316/text/50316w01.htm#50316w01.html_sbhd4

¹⁴ TfL. *Assessment of TfL's experimental scheme to allow motorcycles onto with-flow bus lanes on the TLRN* (Final Project Report PPR495). June 2010. www.tfl.gov.uk/cdn/static/cms/documents/motorcycles-in-bus-lanes-full-report.pdf

¹⁵ In Bristol and Reading, motorcycles have had permanent access to bus lanes since 1996 and 1999 respectively. Bus lanes on most red routes in London were opened to motorcycles in January 2012. Other sites are in: Northern Ireland, Birmingham, Colchester, Derby, Bath, Hull, Plymouth, Swindon, Sheffield, Richmond on Thames, Newcastle on Tyne, Sunderland and the M4 bus lane.

¹⁶ DfT. *The Government's Motorcycling Strategy*. 2005. Chapter 3, P13.

<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/roads/vehicles/motorcycling/overmentsmotorcyclingst4550.pdf>.

The Strategy says, for example, that commissioned research "... showed that this is a complex issue. If the switch of mode was simply between a single occupant car and motorcycle, then there clearly would be congestion benefits. By contrast, a switch simply from public transport to motorcycling would add to the vehicles on the road and so add to congestion."

¹⁷ Source for figures:

- Average car occupancy: DfT *National Travel Survey* 2014. Table 0905.
- www.gov.uk/government/statistical-data-sets/nts09-vehicle-mileage-and-occupancy
- PTWs: calculated from PTW passenger bn veh-km/PTW bn veh-km: DfT: Traffic estimates (passenger kilometres for motorcycles) from *TSGB 2013*. Dec. 2013. Table TSGB0101 (Passenger transport by mode); Traffic estimates (vehicle kilometres for motorcycles) from *TSGB 2013*. Dec. 2013. Table TSGB 0706.

¹⁸ DfT (WSP). *Motorcycles and Congestion: the Effects of Modal Shift Phase 3 Policy Testing*. (2004). Table 4.3:

Percentage change in characteristics by road type due to use of bus lanes.

<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/regional/policy/motorcycles/phase3policytesting.pdf>

¹⁹ House of Commons Transport Committee. *The Government's Motorcycling Strategy*. *Fifth Report of Session 2006-07*.

TSO. (March 2007). www.publications.parliament.uk/pa/cm200607/cmselect/cmtran/264/264.pdf

²⁰ House of Commons Transport Committee. *The Government's Motorcycling Strategy: Government Response to the Committee's Fifth Report of Session 2006-07; Eighth Special Report of Session 2006-07*. TSO. (June, 2007).

www.publications.parliament.uk/pa/cm200607/cmselect/cmtran/698/698.pdf

²¹ DfT. *The Use of Bus Lanes by Motorcycles: Traffic Advisory Leaflet 2/07*. (2007).

<http://webarchive.nationalarchives.gov.uk/20120606202850/http://www.dft.gov.uk/publications/tal-2-07/>