

POSITION PAPER

GERMAN INSURERS ACCIDENT RESEARCH

Motorcycle safety

No. 04

708 motorcyclists died on German roads in 2011, and 9,889 were seriously injured. The risk of being killed as a motorcyclist is around 18 times higher than that of being killed as a car occupant. The UDV must therefore aim to bring about a positive trend in the motorcycle accident statistics to match the trend already seen for car accidents.

Vehicles

Limitation of the weight-to-power ratio

Detailed analysis of the accident data reveals that sports motorcycles with a particularly low weight-to-power ratio and rapid acceleration are involved in serious accidents disproportionately often. In the light of that, there is a need to discuss the imposition of a sensible lower limit on the permitted weight-to-power ratio of these vehicles.

ABS for all

The most effective technical system for improving the safety of motorcycles is an anti-lock braking system (ABS). Consequently, the UDV welcomes the decision to make ABS mandatory in Europe with effect from 2016. However, the UDV takes the view that ABS should be mandatory for all two-wheel motor vehicles and therefore demands ABS for vehicles under 125cc as well.

Limits of advanced driver assistance systems

Further advanced driver assistance systems (ADASs) are likely to be very expen-

sive to implement because altering the driving dynamics of a single-track vehicle in complex, critical situations is highly complicated, and it may not be what the rider wants.

Alternative chassis designs resulting in three-wheel vehicles offer a high level of active safety because they virtually eliminate the kind of crashes that happen as a result of heavy braking and locking of the front wheel. The kinetic energy involved before an accident is thus greatly reduced. These systems should continue to gain acceptance despite the fact that they are still ridiculed by many motorcyclists.

Passive safety

There are currently no effective passive safety systems available. Airbag systems are ineffective because, unlike the driver of a car, a motorcyclist is not held in place by a seat belt and, unlike a car, a motorcycle does not have a safety cell. The safety concept implemented in the BMW C1, which offers both a safety cell and a seat belt, could improve the safety of riders of two-wheel motor vehicles. The problem here is how to get prospective buyers to accept it.

Improved visibility

The accident statistics show that motorcycles are very often not seen by other road users. Measures designed to increase their visibility are therefore to be welcomed. Daytime running lights for motorcycles improve the situation. In an ideal scenario, this measure is combined with the widening of the two-wheel motor vehicle's narrow profile.

Prevention of illegal tuning

Examinations of mopeds, in particular, have revealed that around 50% of these vehicles have been illegally modified. In most cases these modifications were measures designed to improve performance or increase speed. The next most common modifications were to the lights and mirrors as well as measures designed to increase the vehicle's height. The UDV therefore demands that both mechanical and electronic tuning should be made significantly more difficult.

Roads

It is clear from the statistics on accidents involving two-wheel motor vehicles that there are two important groups of accidents involved: those that occur on roads outside built-up areas and those that occur on urban roads. Outside built-up areas, accidents are more likely, above all, on sections of road that have a lot of bends or a significant longitudinal gradient. Short intervals between intersections and limited visibility around bends and intersections - caused, for example, by humps in the road, bridges or embankments - also make accidents more likely.

Speed limit of 80 km/h on sections of road with bends

In built-up areas, roads in poor condition and roads also used by streetcars have a particularly negative impact in terms of accidents involving two-wheel motor vehicles. At accident black spots outside

built-up areas, the speed limit should be reduced to 80 km/h and rigorously enforced.

„Motorcycle-friendly“ crash barriers

Motorcycle-friendly crash barriers should be erected at locations where accidents are more likely. These have a secondary barrier under the guard rail that prevents the motorcyclist from sliding under the rail or colliding with a support pillar.

Road users

What driving licenses should motorcyclists have?

The BF 17 accompanied driving scheme in Germany, which permits young drivers to start driving at 17 provided they are accompanied by a named passenger, has had a very positive impact on the number of car accidents involving inexperienced young drivers. However, the effect of this scheme on accidents involving mopeds and scooters has not been

explicitly investigated. The driving license obtained under the BF 17 scheme automatically entitles drivers to ride these vehicles as well. The young people can thus take to the road without any practical training on two-wheel motor vehicles, which respond completely differently from cars in terms of their driving dynamics.

In addition, with effect from 2013, two-wheel motor vehicles of up to 125cc can be ridden without a speed restriction by 16-year-olds with an A1 driving license, which effectively permits them to ride at significantly higher speeds than before. In the view of the UDV, these two changes will result in an increase in the number of accidents. It is therefore necessary to investigate the options that exist for reducing the dangers while continuing to meet European requirements - and to take the appropriate action.

In addition, it should be considered whether people should be allowed to ride a two-wheel motor vehicle without taking a driving test (a moped restricted to 25 km/h), given that a very high pro-

portion of these vehicles are illegally tuned (and they thus in effect no longer belong to this category of vehicles).

Safety training on the road

The UDV recommends that all motorcyclists should attend safety training at regular intervals to make them more competent motorcyclists and improve their risk awareness. Efforts should be made to provide balanced safety training both in off-road training areas and in traffic. The UDV believes that this training should be mandatory for all motorcyclists.

Protective clothing

It is essential to wear protective clothing to mitigate or totally avoid the consequences of accidents. With the exception of a helmet, it has been found that the smaller a vehicle is, the less protective clothing the rider wears (jacket, trousers, shoes, gloves). The UDV calls for greater efforts to be made to emphasize the importance of wearing protective clothing, which also improves the rider's visibility at the same time.

Links

www.udv.de/en/vehicles/motorcycles

www.udv.de/en/publications/compact-accident-research/analysis-motorcycle-accidents

www.udv.de/en/publications/compact-accident-research/german-safety-tour-survey-training-course-motorcycle-safety-traffic

YouTube-Video

www.youtube.com/watch?v=7CnUz-BC-DY&list=TLPowoqflr8tjRtvi5XZJy1Anfxl22Xk2e

www.youtube.com/watch?v=HmSdVn0fk4Y&list=TLR2QPGiZJ_T96GqYpvgil5dhJki-6Gn2T

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