

Position papers 2019

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In 2014 FEMA and FIM Europe decided to cooperate more closely. A high-level working group with delegates from FEMA and FIM Europe was founded. This working group comes together at least once a year.

The first project was to see where positions in motorcyclists' interest affairs would meet and put them in joint position papers. The aim of these papers was to aid in lobbying the riders' interests in Brussels and Geneva. The first papers were drafted in 2015.

In 2017 the first revision followed, and the joint position papers received a new lay-out. The organisations agreed to have a review every two years. In this leaflet you will find the full set after a second revision. The joint position papers are also added with two new ones: About personal light electric vehicles (PLEVs) and about ISA for motorcycles.

Since 2015, FEMA and FIM Europe also share an office in Brussels. The founding of the working group, the draft of the position papers and the shared office have led to an intensive cooperation on both strategic and operational level. We do this all in the interests of the European motorcyclists!

Dolf Willigers,

Chairman FEMA – FIM Europe Working Group.





Position paper:

## INTELLIGENT SPEED ASSISTANCE (ISAs)

June 2019

### In general

From 2022 new cars will be fitted with an intelligent speed assistant (ISAs) system. This system will alert drivers in a haptic way when they are speeding. Although the European Commission communicates that there are no plans to introduce such a device for motorcycles, such an introduction is in the line of expectations and motorcyclists need to be prepared for it.

### What is ISA

The working of ISA is that a vehicle is fitted with a camera that recognizes traffic signs and/or a database coupled to a GPS or comparable receiver. When this system notices that a vehicle is speeding, either the engine power is temporarily limited (intelligent speed adaptation or ISAd) and/or the driver is warned by a signal or in a haptic way (intelligent speed assistance or ISAs). In present schemes, the driver should always be able to override the system and it should always be possible to switch it off completely.

### Speed and collisions

Speed is a complex factor. According to the International Traffic Forum (ITF) it can influence the crash process at three different stages:

- At the driving phase, the driver can be in a situation that he cannot react and act on time.
- At the emergency phase, an inappropriate speed can prevent the driver from efficiently regulating the vehicle direction and deceleration in such a way as to compensate for a delicate situation.
- At the collision phase, speed can drastically increase the crash severity due to the kinetic energy dissipated during the crash.

ISA is expected to reduce collisions by 30% and deaths by 20% by mass installation in vehicles. It also helps drivers and riders to avoid speeding tickets and focus more on the road instead of the speedometer.

### ISAs or ISAd for motorcycles

- Motorcycles have different dynamics than cars. Full control of speed is essential for control of the motorcycle and the direction in which it goes. A system that reduces the speed of a motorcycle or prohibits acceleration (ISAd) is dangerous for motorcyclists and therefore not acceptable.
- ISAs for motorcycles should only be implemented when it is clear that it is beneficial for road safety.
- This leaves the question if ISAs that only requires more effort from the rider to accelerate (through a greater resistance of the throttle) when he/she is speeding or going to speed is acceptable. We think that this is too dangerous and therefore not acceptable.
- Any form of ISAs should only be implemented when it is tested thoroughly first and these tests prove that there is no extra risk for the rider.
- Installation of an ISAs device should not come at high costs and should not be heavy in weight.
- Any kind of ISAs should be overridable and be able to switch off.
- ISA systems should be designed and fitted in a standardized way and work in the same way on all motorcycles.





Position paper:

## PERSONAL LIGHT ELECTRIC VEHICLES (PLEVs)

June 2019

### In general

Worldwide, especially in the cities, a growing number of people are using personal light electric vehicles (PLEVs), to move on the streets; e.g. electrically powered step type “scooters” and other devices such as Segways, monocycles and powered skateboards. Bicycles, fully electric or with electric pedal assist are also becoming more common. Some of the bicycles in particular have at least as much power as an L1e-B moped and an electric scooter has been seen on the road doing over 80kph. Users may choose to use them in pedestrian, cycle or vehicular space on the street.

Most of these vehicles are not currently subject to any form of registration, or any other regulation usually associated with the use of vehicles such as type approval, driver training and licensing, third party insurance and use of protective helmets. Note that only some of the applicable regulation is made at EU level and may be subject to variations of implementation by Member States. In some cities a significant number of injuries are being sustained by the users of these vehicles.

It is not within the remit of FEMA or FIM to presume to specify what regulations should be applied to the manufacture and use of vehicles which are not mopeds or motorcycles. However, we do have concerns about their use since their users fall, as motorcyclists do, into the category of vulnerable road users.

### Considerations

- Collision and injury data relating to these vehicles must be collated separately from that relating to motorcycles, mopeds or bicycles. This is a major concern for us as we do not want to have the collision data for motorcycles skewed by the inclusion of 2/3 wheeled powered vehicles which are not subject to the same regulations.
- Consideration must be given as to what regulation, if any, should apply to these personal light electric vehicles.
- We propose to create a separate category L0 (“L-zero”) for PLEVs to distinguish them from bicycles, electric assisted bicycles, mopeds, motorcycles and other L-category vehicles.

### Vehicle demands or test specifications should include

- The possibility of specific vehicle categorisation
- Maximum allowable speed
- Braking capability
- Lights
- Provisions for audibility of the vehicle
- Cyber security, where applicable



Position paper:

## ADVANCED DRIVER ASSISTANCE SYSTEMS (ADAS)

June 2019

### In general

Advanced Driver Assistance Systems (ADAS) cover a wide range of systems and applications and provide personal assistance to drivers. In this context we mean ADAS for cars. ADAS can draw attention to approaching traffic and stationary or slow moving vehicles, signal road users in the drivers' blind spot and provide prior knowledge of the traffic situation ahead.

Some systems actively interfere by braking, by applying additional braking force or interfering with the steering or speed of the vehicle. In a number of situations and in certain circumstances, ADAS can completely take over the task of the driver. ADAS can work autonomously or in connection with other vehicles (V2V) or with the infrastructure (V2I/I2V).

### Effects of ADAS on motorcycles

- Riders can benefit from ADAS by better visibility, especially in combination with V2V connectivity. ADAS devices can also prevent accidents where drivers are not aware of motorcyclists, especially in situations where a car is crossing the lane of oncoming traffic, or when a car driver's vision is obscured at crossings.
- In the transition period when many motorcycles belong to a declining minority of non-automated and non-connected vehicles, this can cause risks if ADAS devices in cars assume connectivity and digital visibility.
- ADAS can lead to an overflow of information, thus leading to distraction and diversion.

### Conditions for ADAS to be safe and acceptable for motorcycles

- Motorcycles differ from other non-connected road users like bicycles and pedestrians in speed and acceleration. ADAS devices should be developed with all kinds of vulnerable and non-connected road users in mind and should always be tested with motorcycles.
- ADAS devices must be developed and tested with non-ADAS equipped road users in mind.
- Optional retrofitting of devices, such as beacons, on motorcycles must be possible and allowed to enhance (digital) conspicuity.





Position paper:

## ADVANCED RIDER ASSISTANCE SYSTEMS (ARAS)

### ON MOTORCYCLES

June 2019

#### In general

ARAS covers a wide range of systems and applications that provide personal assistance to riders. ARAS can draw attention to approaching traffic, signal road users in the riders' blind spot, assist the rider in directing his attention to relevant information, provide prior knowledge of the next traffic situation, warn the rider of obstacles in his path. ARAS can work autonomously or in connection with other vehicles (V2V) or infrastructure (V2I/I2V). In this case it is a Connected ITS (C-ITS) device.

#### Effects of ARAS on motorcycles

- Existing vehicle safety systems, such as ABS, lean ABS (or cornering ABS) and traction control, have already proved beneficial to motorcycle road safety. Other devices can be just as beneficial as long as the rider is allowed a full control of the throttle, both deceleration and acceleration, braking and steering.
- Systems can give warnings to riders about speed limits, oncoming curves, traffic jams ahead, damaged roads etc. However, this can also result in information overload. Special attention is needed for fully functional human machine interfaces (HMIs) that filter the needed information and cause no danger by their design.
- The situation may occur where many motorcycles belong to a declining minority of non-automated and non-connected vehicles, which can cause risks if ITS devices of other vehicles assume connectivity and digital visibility.

#### Conditions of ARAS to be safe and acceptable for motorcycles

- ARAS devices for motorcycles cannot take over the control of throttle and steering from the rider with present technology.
- Mandatory devices must be tested on benefits for comfort and road safety and should not be implemented unless it is certain that they do not affect safety in a negative way.
- Roads should always remain accessible for vehicles that are not controlled by electronic systems and are not connected with other vehicles and/or infrastructure.
- Retrofitting of devices that connect motorcycles with other vehicles and/or infrastructure should be possible and allowed but should not be mandatory.
- Data must be secure and privacy should be guaranteed.





Position paper:

## MOTORCYCLES AND THE ENVIRONMENT

June 2019

### In general

Road transport is a large contributor to greenhouse gas emissions and air pollution. The European Union has laid down several goals to decrease the emission of especially CO<sub>2</sub>, PM and NO<sub>x</sub>. National and local authorities are also trying to reduce CO<sub>2</sub>, PM and NO<sub>x</sub> emissions within their boundaries. Some have already banned or are planning to ban older vehicles, including motorcycles, or demand high tolls to enter cities, e.g. Paris and London. Furthermore, taxation schemes are being developed that are based on fuel consumption, exhaust emissions and sound. These developments demand an appropriate answer from the motorcycle industry and motorcyclists themselves in order to preserve a role in future mobility schemes.

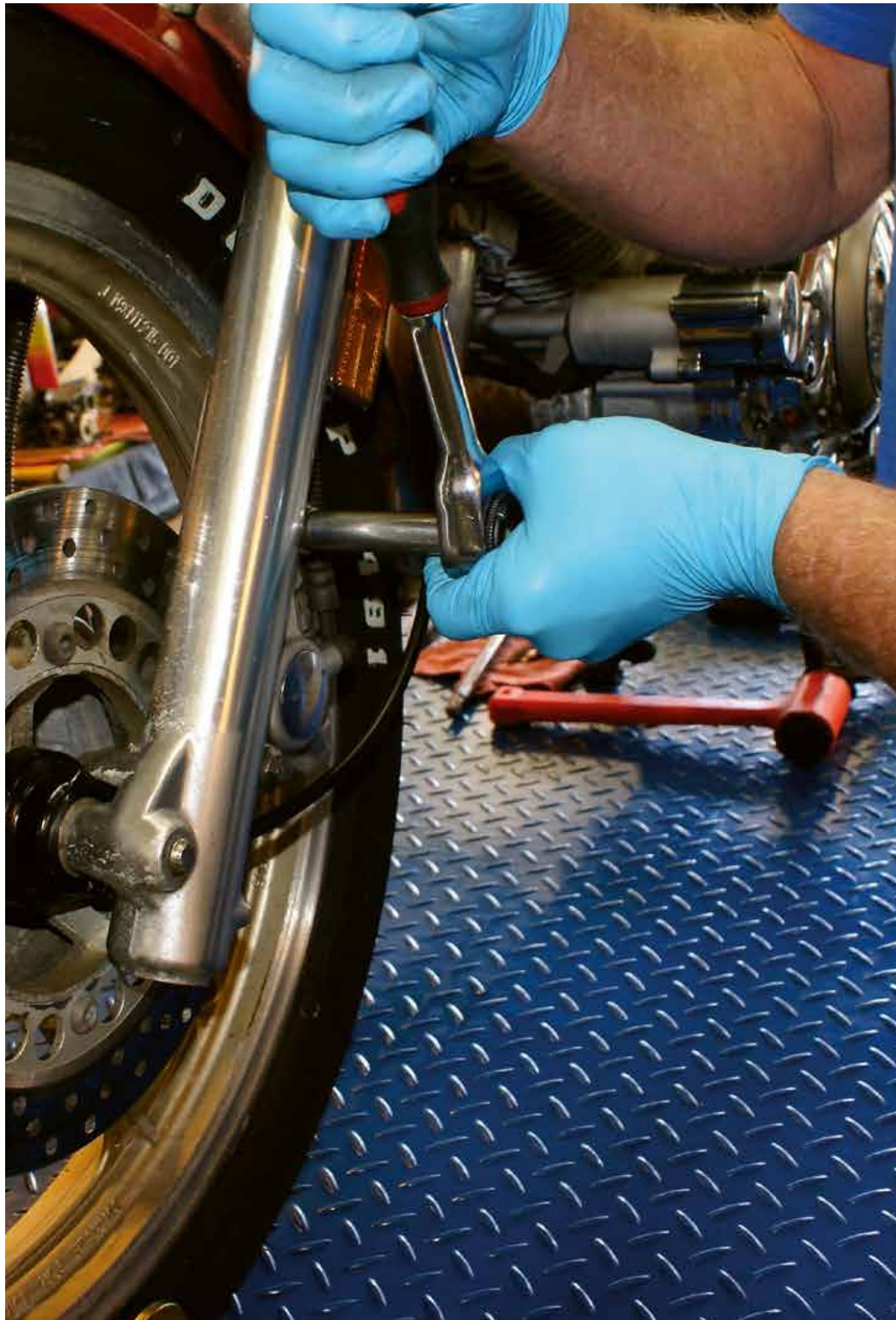
### Contribution of motorcycles to cleaner environment

- Motorcycles are smaller and lighter than cars and therefore already contribute to less fuel consumption and less pollution. They also need less space in traffic and parking, which also contributes to a better flow in traffic and thus less pollution.
- Motorcycles are able to keep moving where cars are stuck in traffic jams, which means they use less fuel and pollute less.
- Motorcycles have become much cleaner in the last decades and will become even cleaner with the implementation of the Euro 5 emission limits in 2020.
- Less energy and material are needed to produce and scrap motorcycles compared to cars, because motorcycles are smaller than cars and much less material and energy is used to make them.

### Actions to make motorcycling cleaner

- Motorcyclists should be aware of the fuel consumption and emissions of their motorcycles and make a balanced choice when they purchase a new motorcycle. To be able to do this the manufacturers of motorcycles should provide motorcycles with consumer-information about fuel consumption, CO, NO<sub>x</sub> and CO<sub>2</sub> emissions.
- Motorcyclists should be aware that their behaviour effects the impact they have to their surroundings, especially the sound emissions, and therefore need to behave in a proper and social way.
- Manufacturers of motorcycles should keep on developing cleaner motorcycles by enhancing the environmental performance of internal combustion engines, and at the same time develop towards zero emission engines.





Position paper:

## REPAIR AND MAINTENANCE INFORMATION (RMI)

June 2019

### In general

Repair and maintenance information (RMI) is information, that is stored in electronic devices which are part of the vehicle. RMI can be accessed by universal or special connectors or on-line. Vehicle repair and maintenance information means all information required for diagnosis, servicing, inspection, periodic monitoring, repair, re-programming or re-initialising of the vehicle, which the manufacturers provide for their authorised dealers and repairers, including all subsequent amendments and supplements to such information. This information includes all information required for fitting parts or equipment on vehicles.

### Why is repair and maintenance information (RMI) important for the rider?

- Repair and maintenance information (RMI) is vital for the functioning of the motorcycle and therefore for the rider.
- Without access to the RMI, repair shops, roadside assistance services and owners of vehicles who, for whatever reasons, do their own maintenance and repairs, may not be able maintain and repair the vehicle.
- RMI stores a large amount of data on the vehicle itself. Such data can be accessed via an external device or might even be transmitted to the manufacturer wireless. Therefore, ownership of data and privacy are at stake.

### How to handle repair and maintenance information

- Riders own the repair and maintenance information (RMI) and have a right to know what data is generated and how it is used.
- Riders must have the ultimate right to decide who has access to the RMI and what is being done with it.
- RMI should be accessible by the owner, or anyone who is delegated to this by the owner, by way of a standardized connector, at no extra cost.
- The access to RMI should be secured, especially against attacks from cyberspace. No unauthorized access to the data of the motorcycle or interference with the handling of the motorcycle must be possible through the RMI interface.





Position paper:

## MOTORCYCLE HIGH RISK SPOT AND NETWORK SAFETY MANAGEMENT

June 2019

### In general

To enhance motorcycle road safety, a safe road infrastructure is essential. This starts with a safe road design. However, collisions can occur, and infrastructure can be less safe than expected and desirable. Therefore, motorcycle high risk (or blackspot) management (HRSM/BSM) is an essential part of the site-specific traffic safety work done by the road administration authorities and concerns short road sections (<0.5 km). Supplementary to this is network safety management (NSM) that concerns longer road sections (2-10 km). Both blackspot management and network safety management concern all infrastructural aspects, but both HRSM/BSM and NSM lack standardised definitions and methods.

### High risk spot detection and registration

- Regular road inspections must be done with and include a motorcycle focus.
- Systematic collision data collection will reveal places and stretches of roads that are particularly motorcycle accident prone, needing further investigation and follow-up measures.

### High risk spot safety management

- As traffic collisions are rare occurrences it is not possible to identify a high risk spot simply by the number of collisions. Therefore, the EU should adopt the British Critical Crash Rate Factor Method, or other systems that are aimed at identifying the high-risk spots, as these take into account additional factors, including traffic volume, to assess risk.
- High risk spot management and network safety management should be part of the safety policy of the European Union with special attention to vulnerable road users, including riders of powered two-wheelers.
- High risk spot management should include all public roads.





Position paper:

## MOTORCYCLE SAFE INFRASTRUCTURE

June 2019

### In general

Road infrastructure is developed with cars in mind. The design of roads, the tests of roadside and median barriers, poles, road surfaces and everything else that is part of or next to a road is done from the perspective of car drivers. Motorcycles are by their nature different from cars and trucks and have different needs. Motorcycles are one-track vehicles and as such are more sensitive than cars to unevenness, slippery and polluted road surfaces, badly maintained or repaired road surfaces and poorly applied markings on the road. Motorcyclists have no protective cage like car drivers. Therefore, road restraint systems, curbs, poles and other obstacles that may be beneficial, or just not dangerous to other road users, are often a hazard for motorcyclists and increase the injury risk in case of a collision. For further detail, see Road restriction systems position paper.

### Why better infrastructure:

- Inadequate and/or badly maintained infrastructure is one of the most common causes of collisions in which motorcycles are involved.
- Inadequate and/or badly maintained infrastructure is one of the main causes of severe injuries and deaths of motorcyclists, even when it is not the cause of the collision.
- Additional costs to improve road infrastructure standards to meet the, so far neglected, needs of vulnerable road users, including motorcyclists, is by far outweighed by the benefit of saving lives on European roads. Funds, spent on infrastructure are not costs but investments in lives, life quality and in financial revenues.

### How infrastructure should be improved

- New standards should be adopted for roadside- and median road restraint systems to make them less dangerous for motorcyclists.
- All unnecessary objects along the road must be removed where possible, to create an obstacle free roadside and to provide free sight for all road users. Objects that cannot be removed should be shielded in a proper and safe way.
- The surface of the road should be free of unnecessary markings. Where markings are unavoidable, they should be made of a material with the same skid resistance as the pavement, and the thickness of the material should be limited. This skid resistance should be maintained for as long as the marking exists.
- The road should be free of all raised lane separations that cannot be driven/ridden over, especially at roundabouts.
- Road layout, and the development, installation and maintenance of road infrastructure and road furniture should be designed with motorcycles in mind.
- Paved roads should be free of debris, including grit.





Position paper:  
**ROAD RESTRAINT SYSTEMS**

June 2019

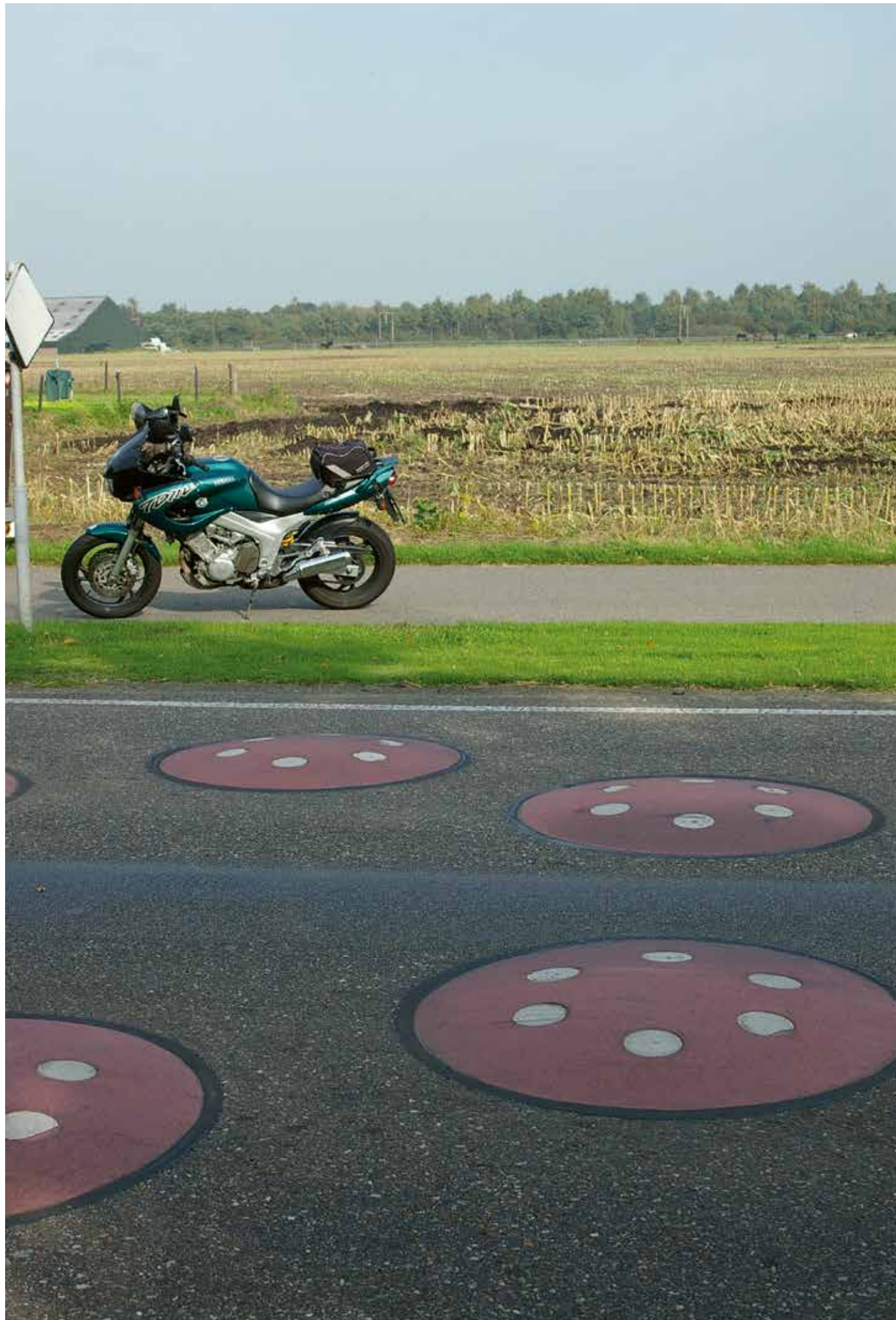
**In general**

Road restraint systems (crash barriers) are usually developed for, and tested with, cars and trucks. Especially for these vehicles they can provide safety as they prevent them from hitting objects near the road or colliding with oncoming vehicles. However, by their design and features they also create a hazard for motorcycles. Motorcyclists have no protective cage like car drivers and motorcyclists have less chance of surviving a collision with a barrier than car drivers. Barriers must therefore only be installed when necessary and be safe for motorcyclists. The cost of improving standards for roadside and median barriers to meet the needs of vulnerable road users, including motorcyclists, is far less than the benefit of saving lives on European roads. Road restraint systems must be safe for all road users.

**How road restraint systems should be improved**

- Road restraint systems, of whatever type, should only be installed where there is a real risk of a collision with an object or oncoming traffic and no other solution - like removing the objects - is possible.
- New, safe, types of barriers need to be developed after extensive research of collisions of motorcycles with barriers, and new standards for roadside and median barriers should be adopted to make them less dangerous for motorcyclists. The existing Technical Specification TS1317-8 should be further developed and turned into an EN standard and extended with top-side protection.
- New standards must include protection against hitting unprotected posts and top-side protection for motorcyclists. Discontinuous protection of posts only improves the safety of motorcyclists when the collision impact is less than 50 km/h. Therefore, in areas with speed limits above 50 km/h, only continuous protection of the posts should be allowed.
- No new cable barriers (i.e. wire rope fences) or other barriers with unprotected posts should be installed. When old unsafe barriers need to be replaced, they must be replaced by a safer barrier type.
- Whenever a barrier is installed, the distance from the road should be as large as possible to allow for evasive manoeuvres and maximum emergency braking in the event of a collision which might reduce the force of the collision impact with the barrier
- Existing barriers in outer curves or other locations with heightened risk must be retrofitted with Motorcycle Protection Systems (MPS).
- Introduce a common European classification system for crash barriers, based on vulnerable road users (VRU) collision friendly features.





Position paper:  
**TRAFFIC CALMING DEVICES**

June 2019

**In general**

Speed is considered to be one of the most important causes of accidents, especially on urban roads or smaller roads in rural areas. Signs are often not enough to reduce speed and enforcement is either not always possible or the costs are considered to be too high. For this reason, the road authorities often choose to install traffic calming devices. These can be optical (road markings), horizontal (road width restrictions/chicanes) or vertical (speed bumps/rumble strips). Speed bumps and similar calming devices must only be installed on roads with a speed limit of 50 km/h or less.

**Why traffic calming devices can be dangerous for motorcycles**

- Motorcycles are balancing vehicles, and a sudden vertical movement or a sudden lateral movement can cause loss of balance.
- Sudden vertical movements can be caused by excessive gradient or height of a speed bump, or vehicle speed that is too high under the circumstances but still can be within the limits.
- Motorcycles are single-track vehicles. This means, that they lose grip more suddenly than multi-track vehicles. Loss of grip can be caused by a slippery surface, but also by the sloping ends of a speed bump that does not run the entire width of the road or by the sloping ends of cushion shaped, or rounded speed bumps.
- When a motorcycle does not approach a speed bump at the appropriate angle, the motorcycle can lose grip, or the rider can lose his balance. This happens when a speed bump is installed in or near a bend, or when the speed bump has an abnormal shape.
- Horizontal calming devices can be dangerous when the shape is not in accordance with the current national regulations or the allowed speed, when the markings are not clear under all circumstances or are situated in a bend or in other place with inadequate view.

**How to install traffic calming devices that are safe for motorcycles**

- Calming devices should always be designed and installed in a way that is in accordance with the current national regulations and the allowed speed.
- The calming devices should be well marked and signed and placed correctly, so they are visible for the road user under all circumstances.
- Calming devices should never be situated in or shortly behind a bend.
- The material of the calming devices should ensure enough grip under all circumstances.
- The gradient and height of a vertical calming device should never be greater than is strictly necessary.
- The vertical calming device or speed bump should never have a slope that runs lateral to the direction of an oncoming motorcycle, because this can lead to loss of balance.





Position paper:

## INITIAL TRAINING AND LICENSING

June 2019

### In general

High quality cost effective initial rider training is probably the most important measure for improving motorcycle safety. Every European citizen who wants to start riding a motorcycle should have an easy access to training and testing. The present EU 3rd Driving Licence Directive, DLD, focuses on the regulatory framework, for example which vehicles that can be used during the test, without considering the content of training and only comments the testing briefly. The directive ignores the very purpose of training and testing.

The claimed present regulatory framework's positive effects on motorcycle safety is undocumented and questionable. An extensive evaluation in EU is necessary. Today training and testing has become complicated and overly expensive which in some, especially Nordic, countries has resulted in a percentage of fatal accidents where the riders didn't have a valid license. The requirement to repeat the same training or test three times doesn't encourage riders to start with a smaller motorcycle. A revision to favour the access and be gender neutral could be to reconsider the limits of the test bikes taking in consideration the arrival on the market of new models. The actual specific demands on test vehicles in combination with a focus on the manoeuvre tests in the final license examination are the reasons for unnecessary failures. In particular the approval rate among women decrease with the higher demands from EU for test vehicles from A1 - A2 - A. The displacement for A2 test bikes should be reduced to 245 cc and power to  $\geq 15$  kW, for A licence test bikes power should be limited to  $\geq 40$  kW.

### How to improve initial rider training

- Initial rider training must teach the skills, knowledge and attitude needed to survive on the road, not just the skills needed to pass a licence test.
- Initial rider training should arrive from the EU/FEMA/FIM/ACEM Initial Rider Training Programme and be described in detail in an agreed, national curriculum for category A.
- The licence test is a quality assurance of the candidate's competence, meaning the minimum skills, knowledge and attitude needed to safely operate a motorcycle on public roads, and it is of great importance that the licence test is designed to do exactly that.
- Risk awareness and risk management should be part of the licence tests.
- The licence test should not expose candidates to peculiar exercises with little relevance to real-life safe riding, the consequence being that perfectly competent candidates may fail the test, while questionable candidates, who have "learned the tricks", may pass.
- All training, testing and demand for test vehicles should be gender neutral.
- A stepped access with one practical and one theoretical test after a cost-effective training coached by trained instructors might encourage riders to start riding on smaller and less powerful bikes.
- Instructors and examiners should ideally be practising riders and should have participated in an officially recognised instructors /examiner's training programme derived from the agreed, national curriculum for category A.





Position paper:  
**MOTORCYCLE SAFE SYSTEMS**

June 2019

**In general**

Safe systems are an approach to road safety management, based on the principle that our lives and health should not be compromised by our need to travel. Motorcycle safe systems are especially aimed at the needs of motorcyclists. Road safety is a human right of all road users. In the Lillehammer ITF/OECD conference in 2008 it was clarified that it is a fundamental motorcycle safety requirement that motorcycles should have a place in overall transport policy and infrastructure policy management. This still hasn't happened in EU.

Motorcyclists are often excluded in guidelines for construction and maintenance. As a result, infrastructure and road furniture aren't developed including the needs of motorcyclists. Motorcyclists have no protective cage like motorists, thus accident prevention measures are even more important than injury reduction measures. Next to infrastructural issues there is need for improved basic and advanced training for motorcyclists, since the basic and advanced training is still focused on technical skills and less on risk awareness. Another aspect that needs attention is the development of ITS (Intelligent Transport Systems) for cars without considering motorcycles.

**How motorcycle safe systems should be improved**

- Motorcyclists are road users with specific needs that must be taken into account in the Safe System Approach.
- Collision prevention measures are even more important than injury reduction measures.
- Motorcyclists should be included in national guidelines for planning and constructing roads.
- Motorcyclists should be included in national guidelines for road maintenance.
- Improving safety for motorcyclists implies setting up a continuous dialogue and co-operation between the stakeholders, including motorcyclists themselves, policy makers, researchers and motorcycle manufacturers.
- Counter measures need to be founded on evidence-based scientific research into driver and rider behaviour, and before-and-after evaluations should be conducted.
- Funding effective road safety activities.
- Launching public awareness campaigns for drivers and riders.
- Better training systems for riders with focus on risk awareness, risk avoidance and risk management.
- Make motorcycles safer by the use of appropriate and tested intelligent transport systems.
- ITS developments for cars and trucks should always include motorcycles and other road users.
- (C-)ITS devices for other vehicles should always be developed keeping in mind that powered two-wheelers often are not equipped with (C-)ITS devices.





Position paper:

## MOTORCYCLING AND MOBILITY

June 2019

### In general

The current focus of the European mobility strategies is on public transport, cycling and walking. However, public transport will never reach everywhere in urban areas and cycling and walking are only possible for limited distances. There will always be a need for individual motorised personal transport. We foresee a growing role for powered two-wheelers, especially motorcycles, instead of cars.

- Motorcycles can be cheaper to buy, easier to maintain and use less fuel than most combustion engine cars and trucks. Therefore, motorcycles are often the only affordable form of personal motorized transport for many people, both in developed and in emerging economies, and in both urban and rural areas. Motorcycles are an important - if not the only - means of personal motorized transport for many people commuting to work, thus escaping social exclusion.
- Motorcycles can go to places which other vehicles can only reach with greater difficulty or with needing much more time. This makes motorcycles important vehicles in all areas for the police, the emergency services, the medical organisations, the health care professionals and other professionals.
- Motorcycles provide the greatest flexibility of all means of personal transport, because:
  - they are smaller than cars, so there is less congestion and less need for parking space.
  - they have a larger range than bicycles or e-bikes.
  - as a means of personal transport, motorcycles provide personal freedom on where you want to go and when you want to do so.
- Motorcycles use less room and therefore need less parking space and as a result motorcyclist save time and distance.
- Motorcycles can be easier and cheaper to electrify than cars.

### How can motorcycles contribute to improved mobility?

- Less congestion by allowing motorcycles to use bus lanes where possible.
- Less congestion by acceptance of filtering through slow moving traffic and advanced stop lines for bicycles and powered two-wheelers.
- Less need of parking spaces by acceptance of parking of motorcycles on pavements if not hindering pedestrians and cyclists.
- Less need of car parking spaces by creating safe motorcycle parking spaces.
- Less congestion through privileged inner city access for powered two-wheelers.
- Less congestion and less need for parking spaces with tax incentive schemes and awareness campaigns highlighting the advantages of powered two-wheelers.
- Less pollution and less emission of greenhouse gasses by using greener motorcycles: less energy consuming internal combustion engines, fuel cell powered engines, battery powered electric engines.
- Make motorcycling safer by use of appropriate intelligent transport systems (ITS), improved rider training, safer infrastructure and better awareness by other road users.





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