

## Detailed overview of road safety related actions after the EC MTR

### Introduction

With the publication of the Mid Term Review by the European Commission in February 2006, ACEM has taken the opportunity to review the the Plan for Action issued in 2004, and developed from this several road safety enhancing actions which are summarised in this document.

The updated actions are organised and presented in the following areas:

- Accident research – Understanding the situation and accident causation (section A)
- Human aspects – Influencing behaviour and attitudes (section B)
- Vehicle related aspects – Key innovations improving safety (section C)
- Infrastructure aspects – Need for a PTW friendly, forgiving road (section D)

Four further publications complement this package with further background information:

- ACEM's view on PTW fatality statistics in Europe (Annex 2)
- Indicative overview of Safety Innovations (Annex 3)
- Indicative overview of Training Initiatives (Annex 4)
- Outline of ACEM's new Charter Commitment (Annex 5)

ACEM believes that these initiatives and their expected results can be amplified by complementary actions from other stakeholders, within a real "shared responsibility" effort, partnerships and coordinated actions towards the common objective of improving the road safety of powered two wheeler users.

ACEM looks forward to discussing further cooperation with the competent authorities and other stakeholders to create a safe and sustainable environment for users of powered two wheelers.

## A Accident research – understanding the situation and accident causation

### A.1 Review of accident statistics

**ACEM offers its support to the European Commission to continuously deliver the most up-to-date and accurate picture of the safety situation of PTWs on European roads.**

In the Communication from the European Commission on the Mid Term Review (MTR) of the Road Safety Action Plan, particular references were made to the fatality trends of motorcyclists in European Roads. The report presented an increase of fatalities in five European countries and at the same time a significant relative rise of motorcycle fatalities due to the decrease of fatalities by other road users.

To correctly understand the current road safety situation of PTWs in Europe, ACEM prepared and analysed the most detailed available picture of the situation for EU 15. The detailed results of this study can be found 'ACEM's view on PTW fatality statistics in Europe' (Annex 2).

ACEM concluded that the claims on motorcycle fatality trends as indicated in the Mid Term Review by the European Commission are generally in line with analyses performed by ACEM. The Mid Term Review report presented only the trends of motorcyclists. The reverse and positive trends of mopeds (reduction in fatalities) were not reported. This may have led to a misleading view of all PTW safety, which is indeed improving.

In its analysis, ACEM also looked at the trend in the absolute number of fatalities for mopeds and motorcycles compared to the respective circulating park, which led to some revealing conclusions, the most important conclusions of which are itemised below:

- Moped safety has been improving: between 2000 and 2004, there have been less moped fatalities (- 26%). This reduction has been going faster than the decrease in the circulating park (-9.7%).
- Motorcycle fatalities has been increasing (+3.4 %) between 2000 and 2004, however, the motorcycle circulating park has increased largely faster (+ 21 %).
- The ratio (number of fatalities compared to the size of the national fleet of powered two-wheelers) shows that with the same brands and vehicles, there are significant differences amongst Member States: in 2004, 7 countries had less than 2 fatalities per 10.000 vehicles; 6 countries recorded more than 4 fatalities per 10.000 vehicles. It is however encouraging to notice that since 2004, a positive trend in powered two-wheelers fatalities has emerged in some of these countries. The potential for improvements is evenly distributed across the EU. Different approaches in training, licensing, infrastructure and more broadly different transport policies may explain these contrasting results.
- Availability of data and comprehensive analysis presents a challenge to road safety agencies, the motorcycle industry and the general motorcycle community. ACEM will, as key stakeholder, continue to monitor and study safety for powered two wheeler users.
- ACEM intends to enhance its cooperation with the European Commission to realise the availability of the most updated and accurate picture. Extra efforts are needed to look also at the 10 new Member States.

### A.1.2 MAIDS project and further in-depth investigations

**ACEM invites external researchers to study the MAIDS-database to obtain further insights in the nature and causation of PTW accidents and identify suitable countermeasures to avoid and mitigate accidents.**

To correctly understand the nature and causation of accidents with Powered Two Wheelers in Europe, ACEM conducted, in cooperation with the European Commission and other partners the Motorcycle Accident In-Depth Study (MAIDS project). During the period 1999-2001, a total of 921 accidents and 923 exposure cases were investigated in detail in five sampling areas located in France, Germany, Netherlands, Spain and Italy, resulting in approximately 2000 variables being coded for each accident. From this data, all the human, environmental and vehicle factors which contributed to the occurrence and outcome of the accident were identified. After the conclusion of the project in 2004, ACEM has been exploring potential countermeasures with a view to take remedial actions to improve safety.

Stakeholders and researchers have shown significant interest in studying the MAIDS database to obtain further insights in specific areas. For this reason, ACEM invested significant resources in 2005 and 2006 in the maintenance of the database.

To allow access to the database for external researchers filing a request to ACEM, a new IT infrastructure for MAIDS was installed at the ACEM premises in Brussels.

In 2006, cooperation agreements have been established with CIDAUT to study passive safety aspects (APROSYS Integrated Project) and with TRL to compare with the results of the 'On The Spot' in-depth accident investigation in the United Kingdom. Results of these studies are expected to be released in the beginning of 2007. Further cooperation activities are expected with other European research projects and organisations active in the field of eSafety, Training of Researchers and in the context of PTW crash analysis at national level.

## B Human aspects – Influencing behaviour and attitudes

### B.1 Correct helmet wearing – ACEM Integrated Helmet Campaign Pilots in 3 regions

**The usage rate of crash helmets should be brought to 100% with a mix of stronger enforcement and awareness raising campaigns.**

Lack of helmet use can lead to an increased exposure to risk of serious injury for the rider. Head injuries are the main cause of death among motorcycle users.

There is evidence that a share of riders do not properly wear or fasten the helmet (eg. size, position, use of chin-strap), or do not wear a helmet at all, although this is a legal requirement throughout the EU25. This was confirmed by MAIDS, indicating that the most significant problem is the not properly adjusted and/or fastened helmet, particularly for mopeds (up to 37% in France), and for motorcycles (up to 10% in Spain). Other sources report worse statistics. MAIDS indicates further that improper size / adjustment / fastening may lead to ejection of the helmet (between 7% and 9% of the cases) and to severe injuries.

A survey indicates the need for particular attention to proper helmet wearing:

- by moped riders in Italy, Spain, France, Portugal, Netherlands and Greece, and
- by motorcyclists in Greece, Spain, Ireland, Italy, Finland.

**Together with stakeholders and authorities, ACEM will conduct pilots for integrated helmet campaigns in 2007 in various regions aimed at:**

- a) Strengthening enforcement of proper and correct helmet wearing,**
- b) Improving awareness of the appropriate helmet wearing,**
- c) Evaluating the possibilities for deploying such action at wider European level.**

ACEM believes that an increased helmet wearing is one of the key areas for action to achieve short term improvements in Powered Two Wheeler safety. To contribute to an improved correct helmet wearing and obtain better insights in the most appropriate way to communicate and educate the riders on this topic, ACEM will run pilot projects for integrated campaigns in geographical areas currently subject to low-helmet wearing.

**ACEM invites the authorities to cooperate with ACEM in this initiative and support the use of appropriate and type approved crash helmets and the proper use of restraint systems.**

Enforcement by authorities of in-use regulations on correct helmet wearing is a key-element for improving PTW road safety.

### B.2 The ACEM Advertising Guidelines – A new commitment to the Road Safety Charter.

**To further support and promote safety enhancing features such as advanced braking systems and encourage safe and responsible behaviour, ACEM recently announced the new Promotion and Advertisement Guidelines.**

Communication and marketing can enhance safety-awareness. The Motorcycle Industry has therefore signed a new commitment to the European Road Safety Charter with the "ACEM Promotion and Advertising Guidelines". The general aim of the ACEM commitment is to ensure that all promotion & advertisements for powered two-wheelers destined for use on public roads show the powered two-wheelers used in a safe and responsible manner, in order to positively influence the attitude of the user.

The manufacturers' advertisement for powered two-wheelers will feature, where and when appropriate, a logo or message denoting a helmet and recommending that users ride responsibly and wear approved helmets.

Manufacturers have committed themselves to include details on safety-enhancing features in dealer training programmes. Powered two-wheelers advertisement, promotions and demonstrations will include details about safety enhancing features of the vehicle. See: 'Outline of ACEM's new Charter Commitment' (Annex 5).

### B.3 Training and Education – need for dedicated awareness campaigns

**ACEM has been supporting the EU-Initial Rider Training Project which is expected to deliver a comprehensive model for Initial Rider Training in Europe.**

Initial rider training provides the necessary knowledge and skills to safely ride a scooter or a motorcycle and gain an A category license. The training quality varies widely in Europe. ACEM has been supporting and promoting the Initial Rider Training (IRT) Project, a European Commission DG TREN funded project coordinated by the Federation of European Motorcyclists Associations (FEMA). The objective of the IRT project is to identify and describe the essential elements of an initial rider training programme.

**Adequate training can help PTW riders to improve their hazard awareness as well as their vehicle control skills which are particularly important to perform emergency manoeuvres.**

Training and education of PTW riders is important for both vehicle control skills and hazard perception and awareness. It was concluded in MAIDS that in 37% of cases, the primary accident contributing factor was a human error on the part of the PTW rider. MAIDS indicated furthermore that a PTW rider traffic-scan error was reported in 28% of all cases involving a crash with another vehicle.

As part of the activities towards improving the safety of PTW riders in Europe, important investments have been made by manufacturers and National Associations in the field of rider education and training. Today, a wide range of training initiatives, both on-road skills-oriented as well as new eLearning approaches aimed at developing hazard-awareness, hazard-perception and improving rider attitude and behaviour are offered by ACEM members.

**Manufacturers and associations have been developing, promoting and deploying a wide range of training and education initiatives aimed at developing various skills for different rider groups.**

Training and education schemes can be subdivided in the following categories, addressed by ACEM members. See: 'Indicative overview of Training Initiatives' (Annex 4).

- Moped safety training
- Motorcycle safety training
- Specialty skills training,
- e-Coaching and Multimedia and
- Dedicated guidebooks.

Key issues in these programs include hazard perception, recognition of dangerous situations, responding adequately to dangerous situations, safety awareness in general, mental training, and refreshing vehicle control skills or adding new (higher level) vehicle control skills.

### B.4 Driving License

**ACEM has always supported the concept of progressive access to Powered Two Wheelers, the creation of a pan-European light motorcycle category A1, and the more attractive intermediate category A2.**

The 3<sup>rd</sup> Driving License Directive, which is now in a final stage of decision making, deserves some comment. ACEM has always supported the stepped licensing system, the creation of a pan-European light motorcycle category A1, and the more attractive intermediate category A2. ACEM is pleased that these features are included in the forthcoming Directive, although some other elements in the final version of the draft Directive are unfortunately not perfect.

In order to avoid penalising users seeking to follow a progressive access to motorcycles, ACEM is looking forward to further co-operation with the European Commission Services in order to improve the Annexes in the Directive: 'Annex VI: Training and Testing' and 'Annex II: Test Vehicles'.

For the further implementation at national level, ACEM wishes to highlight that its members are at the disposal of the competent authorities to support an informed implementation.

## C. Vehicle related aspects – key innovations improving safety

### C.1 Individual safety initiatives and innovations

**The Industry is constantly introducing innovations to further enhance the safety of its users by increasing the active and passive safety of the vehicles.**

The development of new products and the introduction of new technologies constitute a core part of the business of the Industry. Road safety plays a central role in orienting these research and development activities. Several vehicle-based innovations both at vehicle concept level as well as safety feature level were recently offered to the public and are part of ongoing research. See: 'Indicative overview of Training Initiatives' (Annex 4)

### C. 2 Advanced braking systems commitment

**In 2004, ACEM was amongst the first subscribers to the EC Road Safety Charter, announcing that by 2010 the majority of the street models newly put on the market by ACEM member manufacturers would be equipped with advanced braking systems. The implementation of this commitment is on schedule. More and more vehicles become available with this safety enhancing technology.**

Using the full potential of the brakes, especially in an emergency situation, is one of the more difficult tasks for motorcyclists, especially for novice riders. Errors in braking with a motorcycle may lead to skidding, capsizing or the vehicle becoming unstable; incorrect use of motorcycle brakes is an important factor in PTW accidents. (It should be noted that the characteristics of braking systems for motorcycles are different from those of cars).

An advanced braking system means an "Antilock Brake System (ABS)" acting on one or both wheels, or a "combined brake system (CBS)" or an amplified brake system, or any combination of these technologies.

In 2004, ACEM has decided that it will progressively supply more powered two-wheelers equipped with advanced braking systems to the market. As a result of this commitment the majority of street models available in 2010 will be equipped with an advanced braking system.

The increased deployment of such systems will provide an added benefit in emergency situations, in particular for novice riders. ACEM is happy to communicate that the progress is on schedule.

### C.3 Conspicuity and Daytime Running Lights

**PTW conspicuity has been identified as an important item in the PTW safety debate. To further improve the ability of other road users to correctly detect powered two wheelers and react appropriately, ACEM has been, and is, researching conspicuity.**

Motorcycle accident in-depth studies show that the perception of PTWs by the other road users is one of the main causes of multi-vehicle accidents involving powered two-wheelers and other motor-vehicles.

To avoid users becoming more vulnerable when they forget to switch their headlights on, the manufacturers that are members of ACEM committed themselves to equip all their models, including mopeds, with Automatic Headlamp-On (AHO) since 2003.

As a follow up to its AHO commitment, ACEM decided to launch a scientific research project on PTW conspicuity. While most past research focused on "Detection", often self-reported by subjects, ACEM developed a methodology that measures the output of the complete chain from detection to task performance. This methodology has been presented at 19th International Technical Conference on the Enhanced Safety of Vehicles, Washington 2005.

As a logical next step in its research on PTW conspicuity, the motorcycle industry now seeks technical solutions aiming at mitigating the perception problem by other road users. Relative short terms solutions are currently under investigation through the scientific method of behavioural conspicuity evaluation that was developed entirely by the European industry.

Depending on the results of this research that will become available by the second half of 2007, the motorcycle industry is likely to propose technical solutions to the UNECE and may ask the Commission to support them with the aim of a quick adaptation of the regulatory framework at worldwide level.

In the meantime, ACEM strongly recommends to the Commission to freeze any proposal until (a) technical solution(s) of enhanced PTW conspicuity will be positively evaluated and its (their) industrial feasibility confirmed. Such a decision would demonstrate that the safety of PTW riders is integrated in the Commission's policy and thus would be in line with the common priority to improve the safety of PTW users.

**Based on the findings of MAIDS, ACEM wishes to emphasise the importance of educating both riders and other vehicle drivers through dedicated awareness campaigns.**

It is ACEM's view that the PTW conspicuity issue is not only about making PTWs and their riders better "seen", it is also about educating other vehicle drivers to look for and see motorcyclists. Repeated awareness campaigns, aimed at both car drivers and PTW riders, will improve the situation.

## D. Infrastructure aspects – Need for a PTW friendly, forgiving road

**Roads need to be forgiving, also for PTW riders. Road infrastructure improvements to enhance safety should consider the effects on all road users, so that they would not be at the cost of, or detrimental to the safety of particular groups of vulnerable road users, such as motorcyclists and moped riders.**

### D.1 Safe infrastructure guidelines handbook

**The ACEM handbook “Guidelines for PTW-safer road design in Europe” contributes to the dissemination of best practices in road infrastructure.**

Road Infrastructure, lying entirely in the hands of authorities, rarely acknowledges the needs of powered two-wheelers in its design and maintenance. In some Member States, manuals on powered two-wheeler friendly infrastructure have been developed, under the leadership of national engineering and road safety institutes, as well as under the leadership of the motorcycle industry. Unfortunately, awareness and deployment of these best practices is still very unsatisfactory. The ACEM publication describes the specific needs of riders and contains guidelines for those responsible for road design and road maintenance.

With the ACEM handbook the Motorcycle Industry has been pulling together the existing knowledge in one manual aimed at road planners and engineers. This manual was presented at Intertraffic in April 2006 and has been published in three European languages.

The best ways of getting the messages in these guidelines across to the national and local road engineers and planners need to be studied in order to achieve maximum effects.

ACEM welcomes, as an encouraging sign, the recent European Commission proposal for a directive on road infrastructure and invites all Member States to support this proposal.

**A future ACEM brochure aimed at riders will inform about the influence that road infrastructure can have on PTW safety.**

ACEM is currently working out a brochure that aims at highlighting to PTW riders the currently existing road infrastructure hazards, and how they can best cope with them.