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IMMA's proposal for adding HID headlamps to Regulation No .113 and installation requirements to Regulation No. 53

1. Background

The use of HID headlamps on motorcycles increases effective night-time vision, by giving the same illumination for a smaller electrical supply. This provides a great potential for developing new lighting systems, with greater and more reliable performance, throughout the motorcycle range. IMMA members consider this to be an essential option for improving motorcycle safety, particularly as more and more other types of vehicle are being equipped with HID lamps.

To enable motorcyclists to benefit from the safety advantages of better headlamps, at 56/GRE IMMA presented their proposal for adding HID headlamps to R113 and the corresponding installation requirements in R53. The proposals are contained in GRE/2006/46 and GRE/2006/47; the background research by JARI is in GRE-56-07.

The proposals were discussed at 57/GRE and, in general, agreed, with the exception of the question of the headlamp levelling requirements, for which IMMA has proposed a manual levelling system..

Some delegations wanted to introduce automatic levelling after a period of 5 years and IMMA was asked to consider this matter prior to a further discussion at 58/GRE.

This document presents the conclusions of IMMA's discussions and their consultations with interested administration delegates.

2. High output headlamps and levelling

2.1 Definition of high output lamps

IMMA agrees that the limit of 2000 lumens is an appropriate value for defining high output lamps, whether they have one or more light sources.

2.2 Headlamp levelling

The IMMA research (GRE-56-07) has shown that:

1. Glare from a motorcycle in changing situations such as cornering in a curve and making a turn at an intersection is not significant.
2. Glare from pitching under acceleration is momentary, as it is for passenger cars when on an irregular road surface.
3. With the headlamp aimed at the median value of the range prescribed by R53 (-1.5% in the range -0.5% to -2.5%), the headlamp aiming point remains below the HH line (see the appendix, which contains the relevant part of the JARI research)

When taken with the fact that motorcycles are either ridden rider-alone or fully laden, this is why IMMA believes that a manual device with two positions is all that is needed for the correct leveling of high output headlamps fitted to motorcycles.

Automatic levelling devices for motorcycles have not yet reached the feasibility stage, largely because the cost of such systems would be prohibitively expensive. Consequently, cost-effectiveness studies cannot be done.

When considering headlamp levelling, there is a fundamental difference between passenger cars and motorcycles. Passenger cars are subject to many different headlamp positions due to the range of possible loading conditions. Motorcycles have only two positions, either rider-alone or fully laden.

Motorcyclists will, therefore, be much more likely to be aware of the aim of their headlamp when riding. At night motorcyclists will have to adjust the position of the beam in order to see correctly; in the daytime, if the headlamp remains on the high setting and the motorcycle is fully laden, the result will be, at worst, increased conspicuity.

3. Conclusions

IMMA wishes motorcyclists to benefit from the improved safety of high output lamps, i.e. those with an output of more than 2000 lumens.

The automatic levelling requirement for passenger cars is not necessary for motorcycles because:

- passenger cars have many loading conditions to consider, while for motorcycles there are only two
- motorcyclists therefore have a greater incentive to use the right setting than car drivers
- a headlamp aimed at the median point of the range prescribed by R53 would not rise above the HH line

For these reasons, IMMA considers a manual levelling device sufficient for motorcycles equipped with headlamps with an output of more than 2000 lumens.

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