

WMTC

**HARMONISED TEST PROCEDURE AND GTR DEVELOPMENT FOR A MOTORCYCLE
EXHAUST-EMISSIONS CERTIFICATION PROCEDURE**

Transmitted by the expert from Germany and by the expert from IMMA

The WMTC project started with the clear objective of creating a harmonised test procedure, based on a common test cycle, which would be applicable throughout the world. As such, the procedure can form the basis for a Global Technical Regulation (GTR) on motorcycle exhaust-emissions and the measurement of CO₂ / fuel consumption.

The work on the test procedure is nearing completion. Test cycle, gearshift model, test protocol (including ISO contribution) and emission validation test are finalised. The state of the work is described in the draft technical report from the WMTC group (informal document no.9 to 45th GRPE).

With the results from the emission validation test (53 vehicles), with the expected results from the round robin test and any additional data made available by the participants in the WMTC group, it will be possible to prepare a comparative study of the relative severity of the different procedures. This comparison will prepare the basis for considering the appropriate levels for emissions in the context of a GTR.

The present WMTC group is willing to undertake this work on behalf of GRPE, in order to support the proposal from Germany that the WMTC project should be extended from the preparation of a globally harmonised test procedure to the preparation of a GTR on motorcycle exhaust-emissions. Germany agrees to sponsor the WMTC GTR process and proposes to send the following document to WP.29 / AC3.

PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION: MOTORCYCLE EXHAUST-EMISSIONS CERTIFICATION PROCEDURE

Transmitted by the Representative of Germany

Objective of the Proposal

The objective of this proposal is to establish a harmonised Global Technical Regulation (GTR) on the certification procedure for motorcycle exhaust-emissions. The basis will be the harmonised test procedure, developed by the WMTC informal group of GRPE (see draft technical report, informal document no. 9 to 45th GRPE).

Regulations governing the exhaust-emissions from all road vehicles have been in existence for many years but the methods of measurement vary significantly. To be able to correctly determine a vehicle's impact on the environment in terms of exhaust emissions, the test procedure and consequently the GTR needs to adequately represent real-world vehicle operation.

Increasingly, motorcycles are vehicles which are prepared for the world market. It is economically inefficient for manufacturers to have to prepare substantially different models in order to meet different emission regulations and methods of measuring CO₂ / fuel consumption, which are, in principle, aimed at achieving the same objective. To enable manufacturers to develop new models most effectively it is desirable that a GTR should be developed.

Description of the proposed Regulation

The proposed regulation will be based on new research into the world-wide pattern of real motorcycle use. From this data a representative test cycle in three parts has been created, covering different road types. Based on real life data a gearshift procedure was developed. The general laboratory conditions for the emission test have been brought up to date by an expert committee in ISO and now reflect the latest technologies.

This basic test procedure reflects world wide on-road motorcycle operation as closely as possible and enables a realistic testing of existing and future motorcycle exhaust-emissions technologies.

The weighting factors for calculating the overall emission results from the several cycle parts will be calculated from the widest possible statistical basis worldwide. The classification of vehicles will reflect the general categories of use and real world driving behaviour.

The performance levels to be achieved in the GTR will be discussed on the basis of the most recently agreed legislation in the Contracting Party countries, required by the 1998 Agreement. With the results from the emission validation test (53 vehicles), with the expected results from the round robin test and any additional data made available by the participants in the WMTC group, it will be possible to prepare a comparative study of the relative severity of the different procedures.

The question of harmonised off cycle emissions requirements will be considered and appropriate measures introduced in due course.

Existing Regulations and International Standards.

UN ECE Regulation

ECE R 40 - Uniform provisions concerning the type approval of motor cycles equipped with a positive-ignition engine with regard to the emission of gaseous pollutants by the engine.

EU Regulation

97/24/EC (2002/51/EC) - Directive on certain components and characteristics of two or three-wheel motor vehicles

Chapter 5 – Measures to be taken against air pollution caused by two or three-wheel motor vehicles.

Japanese Regulation

Road Vehicle Act, Article 41 “Systems and Devices of Motor Vehicles”

Safety Regulations for Road Vehicles, Article 31 “Emission Control Devices”

USA Regulation

United States Code of Federal Regulations (CFR) Title 40 Part 86 (40 CFR Part 86),

- Subpart E, Emission Regulations for 1978 and later new motorcycles; general provisions
- Subpart F, Emission Regulations for 1978 and later new motorcycles; test procedures

ISO standards

ISO 11486 (Motorcycles - Chassis dynamometer setting method),

ISO 6460 (concerning the gas sampling and cooling aspects)...

ISO 7860 (fuel consumption)