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NHTSA-03-14395-10

UNITED
NATIONS

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**Economic and Social
Council**

Distr.

GENERAL

TRANS/WP.29/AC.3/6

5 December 2003

ENGLISH

Original: ENGLISH AND FRENCH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations (WP.29)
Executive Committee (AC.3) of the 1998 Global Agreement

PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION
CONCERNING WORLD-WIDE MOTORCYCLE EMISSIONS TEST CYCLE

Technical Sponsor: Germany

Note : The text reproduced below was considered and adopted by the Executive Committee (AC.3) of the 1998 Global Agreement at its ninth session, in November 2003. It is based on document TRANS/WP.29/2003/103 that had been submitted by Germany, not amended (TRANS/WP.29/953, para. 147).

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Objective of the proposal

The objective of this proposal is to establish a global technical regulation (gtr) for motorcycle emissions. The basis will be the harmonized test procedure, developed by the WMTC informal group of GRPE (the technical report is contained in informal document No. 9 of the forty-fifth session of GRPE).

Regulations governing the exhaust-emissions from all vehicles have been in existence for many years but the methods of measurement vary. To maximize and ensure the benefit to the environment as well as the efficient use of energy, it is desirable that as many countries as possible use the same high standards of emission control. For this a GTR is an important step forward.

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 different parts of the test cycle have been calculated from the widest possible statistical basis worldwide. The classification of vehicles reflects the general categories of use and real world driving behaviour.

The performance levels to be achieved in the GTR will be discussed after validation of the proposed test cycle and procedure, by GRPE on the basis of the most recently agreed legislation in the Contracting Party countries, future environmental objectives and the cost/benefit analysis required by the 1998 Agreement.

The question of harmonized off cycle emissions requirements will be considered in the context of the GRPE off-cycle group led by the United States of America and appropriate measures introduced in due course. Similarly, if necessary, additional measures such as requirements for evaporative emissions can be added after later discussion.

Existing Regulations and international Standards

Though there are no regulations currently contained in the Compendium of Candidates, the following regulations contain relevant applications of exhaust-emissions requirements for motorcycles which are available for technical reference in developing a new gtr:

UNECE Regulation No. 40, 01 series of amendments:

Uniform provisions concerning the approval of motorcycles equipped with a positive-ignition engine with regard to the emission of gaseous pollutants by the engine

EU:

Directive 2002/51/EC amending directive 97/24/EC: The reduction of the level of pollutant emissions from two-and three-wheeled motor vehicles

Japanese Regulation Trias:

Road vehicle Act, Article 41 "Systems and Devices of Motor Vehicles"
Safety Regulations for Road Vehicles, Article 31 "Emission Control Devices"

United States of America regulation:

US-FTP Subpart F, Emission Regulations for 1978 and Later New Motor-cycles

ISO standards:

ISO 11486 (Motorcycles - Chassis dynamometer setting method)

ISO 6460 (gas sampling)

ISO 7860 (fuel consumption)
