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GLOBAL REGISTRY

Created on 18 November 2004, pursuant to Article 6 of the
AGREEMENT CONCERNING THE ESTABLISHING OF GLOBAL TECHNICAL
REGULATIONS FOR WHEELED VEHICLES, EQUIPMENT AND PARTS WHICH CAN BE
FITTED AND/OR BE USED ON WHEELED VEHICLES
(ECE/TRANS/132 and Corr.1)
Done at Geneva on 25 June 1998

Addendum

Global technical regulation No. 3

MOTORCYCLE BRAKE SYSTEMS

(Established in the Global Registry on 15 November 2006)

Appendix

Proposal and report pursuant to Article 6, paragraph 6.3.7. of the Agreement

- Proposal to develop a global technical regulation concerning motorcycle brake systems (TRANS/WP.29/AC.3/3)
- Preliminary report on the development of a global technical regulation concerning motorcycle brake systems (TRANS/WP.29/2005/25), adopted by AC.3 at its eighteenth session (ECE/TRANS/WP.29/1056, para. 88)



UNITED NATIONS

PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION CONCERNING MOTORCYCLE BRAKE SYSTEMS

Objective of the proposal

Based on statistics from the United States of America for the period from 1990 to 2000, about 13 percent of an average of 2,500 motorcycle fatalities were related to braking manoeuvres.

In view of the 1998 Global Agreement, we now have an opportunity to develop an improved and harmonized motorcycle brake systems regulations. Moreover, the work on the global forum will provide an opportunity to consider in the new regulation most, if not all, international safety concerns as well as available technological developments.

The objective of this proposal is to develop a global technical regulation regarding motorcycle brake systems. The proposed regulation will be based on existing national regulations of contracting parties as well as international standards and regulations, and is intended to contain provisions regarding modern technologies such as Anti-Lock Brake System (ABS) and Combined Brake System (CBS).

As motorcycles are sold around the world, everyone could benefit from harmonization and new technology based improvement of motorcycle brake systems regulations. The benefits to the governments would be the improvement of motorcycle safety by looking at best practices, and the leveraging of resources. Manufacturers would benefit from reduction of the cost of development, testing and production process of new models. Finally the consumer would benefit by having better choice of motorcycle models built to higher, globally recognized standards providing a better level of safety at a lower price.

With the improvement of disc brake systems and the recent introduction of new technologies such as ABS and CBS, modern motorcycles are available with very sophisticated and effective braking systems. It is now of interest to the international regulatory community to assess whether the current standards for motorcycle brakes are still appropriate in light of these developments and whether these new technologies could provide significant improvement in rider safety.

Description of the proposed regulation

The global technical regulation will be developed based on best practices in the existing regulations, directives and industry standards listed below.

The development will consist of two stages aimed at creation of one final gtr document embracing new advances in technology. The first stage of gtr development will consist of comparing the existing regulations based on their stringency, cost effectiveness, safety benefit, and developing a harmonized draft. The second stage of the development of the gtr will consider any additional advance technological and safety improvements and the corresponding economic effectiveness arising from incorporation of provisions related to new technologies such as ABS and CBS.

The work already carried out by the International Motorcycle Manufacturers Association (IMMA) and the results of the motorcycle brakes test programme initiated by the United States and conducted by Canada will form the foundation for the proposed gtr.

Elements, which cannot be agreed upon by the Working Party on Brakes and Running Gear will be identified and dealt with in accordance with protocol established by AC.3 and WP.29. The proposed global technical regulation will be based on existing national regulations of contracting parties as well as voluntary standards listed below. It will contain provisions acceptable to all concerned.

Proposed gtr will be drafted in the format adopted by WP.29.

Existing regulations and directives

Though there are no regulations currently contained in the Compendium of Candidates, the following regulations will be taken into account during development of the new global technical regulation regarding motorcycle brake systems.

- Europe: UNECE Regulation No. 78 – Uniform provisions concerning the approval of vehicles of category L vehicles with regard to braking.
EU Directive 93/14/EEC, braking for category L vehicles
(in effect, the same as ECE Regulation No. 78)
- USA: U.S. Code of Federal Regulations (CFR) Title 49: Transportation;
Part 571.122: Motorcycle brake systems.
- Canada: Canadian Motor Vehicle Safety Regulation No. 122 – Motorcycle brake systems.
- Japan: Japanese Safety Standard JS12-61
- Australia: Australian Design Rule 33/00 – Brake systems for motorcycles and mopeds.

International Voluntary Standards

- ISO 8710:1995, Motorcycles – Brakes and braking devices
- tests and measurement methods
- ISO 12364:2001, Two-wheeled motorcycles - Antilock braking systems (ABS)
- tests and measurement methods
- ISO 8709:1995, Mopeds – Brakes and braking devices
- tests and measurement methods
- ISO 12366:2001, Two-wheeled mopeds - Antilock braking systems (ABS)
- tests and measurement methods
- SAE J109 MAR87 Service Brake System Performance Requirements
- Motorcycles and Motor-driven Cycles.

PRELIMINARY REPORT ON THE DEVELOPMENT OF A GLOBAL TECHNICAL REGULATION CONCERNING MOTORCYCLES BRAKE SYSTEMS

A. INTRODUCTION

During the one-hundred-and-twenty-sixth session of WP.29 in March 2002, AC.3, the Executive Committee for the 1998 Global Agreement, adopted the 1998 Global Agreement Program of Work, which included the development of a global technical regulation (gtr) on motorcycle brake systems. Subsequently, Canada offered to sponsor the gtr on motorcycle braking requirements at the fifty-second session of GRRF in September 2002. To proceed with the development of the gtr, AC.3 endorsed Canada's request to establish and chair an informal group on motorcycle brakes, at the one-hundred-and-thirtieth session of WP.29 in June 2003.

This preliminary report is in response to paragraph 5. of TRANS/WP.29/882 – Guidelines Regarding Proposing and Developing of Global Technical Regulations. It was prepared after a thoughtful review by GRRF of the proposal submitted by Canada for the development of a gtr on motorcycle brake systems, document TRANS/WP.29/AC.3/3, which was adopted by AC.3 at its seventh session in March 2003.

B. CURRENT STATUS

Some existing motorcycle brake regulations have not kept pace with the advancement of modern technologies. With the improvement of disc brake systems and the recent introduction of new technologies such as anti-lock brake systems (ABS) and combined brake system (CBS), modern motorcycles can be equipped with very sophisticated and effective braking systems.

Statistics compiled to date indicate that improved motorcycle brake systems would be beneficial in reducing motorcycle accidents. Fatal motorcycle accidents have been on the rise in North America since 1997. Of particular concern is the rise in motorcycle accident fatalities for the 40 year old and above age group, by 8.2 per cent in Canada from 1994 to 2000, and 24.7 per cent in the United States from 1994 to 1999. In addition, statistics from the United States of America for the period of 1991 to 1999 inclusively indicate that about 13 per cent of the yearly average of 1,055 fatal single vehicle motorcycle crashes were related to braking manoeuvres. A request for additional motorcycle traffic accident data was made at the fifty-second GRRF session, to all nations, in an effort to prepare for the cost effectiveness study for the purposes of the gtr.

All could gain from motorcycle brake system regulations which are harmonized at the currently most severe level, so that the benefits of modern technologies can be exploited. The benefits to the governments would be the improvement of motorcycle safety by adopting best practices, and the leveraging of resources. Manufacturers would benefit from reduction of the cost of development, testing and production process of new models. Finally the consumer would benefit by having better choice of motorcycle models built to higher, globally recognized standards providing a better level of safety at a lower price.

The development of a gtr on motorcycle brake systems is intended to reduce the injuries and fatalities associated with motorcycle accidents. GRRF believes that it is time to update the current standards with a harmonized regulation, based on the best practices within existing

national regulations, while taking into consideration modern brake system technologies that could improve rider safety.

C. EXISTING REGULATIONS OR STANDARDS CONSIDERED

A considerable number of regulations and standards are being considered to provide the basis for the development of this gtr, including:

- UNECE Regulation No. 78 – Uniform provisions concerning the approval of vehicles of category L vehicles with regard to braking
- U.S. Code of Federal Regulations (CFR) Title 49: Transportation; Part 571.122: Motorcycle brake systems
- Canada Motor Vehicle Safety Regulation No. 122 – Motorcycle brake systems
- EU Directive 93/14/EEC, braking for category L vehicles (in effect, the same as UNECE Regulation No. 78)
- Japan Safety Standard J12-61
- Australian Design Rule 33/00 – Brake systems for motorcycles and mopeds
- ISO 8710:1995, Motorcycles – Brakes and braking devices - tests and measurement methods
- ISO 12364:2001, Two-wheeled motorcycles - Antilock braking systems (ABS) - tests and measurement methods
- ISO 8709:1995, Mopeds – Brakes and braking devices - tests and measurement methods
- ISO 12366:2001, Two-wheeled mopeds - Antilock braking systems (ABS) - tests and measurement methods

D. DEVELOPMENT OF A GTR

The global technical regulation will be developed based on best practices in the existing regulations, directives and industry standards. It will also take into account new braking technologies such as ABS and CBS that are available for motorcycles.

Due to the time schedule and nature of the task, discussions on the content of the gtr and research testing have already begun. As of December 1, 2004 five meetings on the topic of the development of a motorcycle brake gtr have been held, including two before the informal group was established, as noted below:

- October 25, 2002, in Montreal, Canada
- February 6, 2003, in Geneva, Switzerland
- July 16-17, 2003, in Pisa, Italy. first meeting by the informal group on Motorcycle Brake Systems
- April 26-28, 2004, in Brussels, Belgium. second meeting by the informal group on Motorcycle Brake Systems
- November 08-10, 2004, in Montreal, Canada. third meeting by the informal group on Motorcycle Brake Systems

The meetings were open to all interested parties. The attendees for the informal group included representatives of:

- Canada
- United States of America
- Italy
- Japan (JASIC (Japan Automobile Standards Internationalization Center))
- India (by correspondence)
- IMMA (International Motorcycle Manufacturers Association)
- FEMA (Federation of European Motorcyclists' Associations)
- AMA (American Motorcyclist Association)
- JAMA (Japan Automobile Manufacturers Association, Inc.)

IMMA initiated a programme of work at forty-sixth session of GRRF with the intention to complete a proposal for a gtr for motorcycle brakes. In an effort to select the most stringent performance requirements for a gtr, IMMA conducted an analysis of the relative severity of three national motorcycle brake system regulations in which the UNECE Regulation No. 78, the United States Federal Motor Vehicle Safety Standard FMVSS 122 and the Japanese Safety Standard JSS 12-61 were compared. These reports, along with suggested requirements for a gtr, can be found on the UNECE website as informal document No. 15 presented at fifty-first GRRF session, and informal document No. 26 presented at the fifty-third GRRF session.

The United States of America, in a joint project with Canada, conducted a similar study comparing the severity of the same three national regulations. This report was made available at the fifty-fifth GRRF session. Despite having different methodologies for comparison, this work produced results very similar to that of the IMMA work.

The results of these reports were discussed at the second informal group meeting in Brussels. A preliminary consensus was reached among all participants, in which the outline of the performance requirements for a gtr on motorcycle brake systems was reached.

The United States of America and Canada have conducted a further performance evaluation study of motorcycles equipped with anti-lock brake systems compared to conventional braking systems. This report is available.

The technical content of the gtr would be presented to GRRF at its fifty-seventh session in February 2005.

GRRF believes that these efforts are effective in highlighting the differences between each national regulation, and will provide the necessary information to establish an updated and more stringent motorcycle brake system regulation.

Elements, which cannot be agreed upon by the Working Party on Brakes and Running Gear will be identified and dealt with in accordance with protocol established by AC.3 and WP.29.

E. FUTURE WORK

The informal group has established a schedule for the development and completion of this gtr. The draft gtr would be presented to GRRF at its fifty-seventh session in February 2005 and, in the absence of any major disagreement, the final draft could be approved at the fifty-eighth GRRF session in September 2005. After GRRF's adoption, the final report will be prepared and submitted together with the approved gtr to AC.3 and WP.29 for consideration, in 2006.

F. CONCLUSION

Following the preliminary review, Canada, as Technical Sponsor, requests the approval of AC.3 for the continuation of this work toward a global technical regulation for motorcycle brake systems, based on the proposal document TRANS/WP.29/AC.3/3.
