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**Economic Commission for Europe**
**Inland Transport Committee**
**World Forum for Harmonization of Vehicle Regulations**
**Working Party on Noise**
**Fifty-first session**

Geneva, 15-17 February 2010

**Report of the Working Party on Noise  
 on its fifty-first session (15-17 February 2010)**
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## **I. Attendance**

1. The Working Party on Noise (GRB) held its fifty-first session from 15 (afternoon) to 17 February 2010 in Geneva, under the chairmanship of Mr. Ch. Theis (Germany). Experts from the following countries participated in the work following Rule 1(a) of the Rules of Procedure of the World Forum for Harmonization of Vehicle Regulations (WP.29) (TRANS/WP.29/690 and Amend.1): Belgium; Canada; China; Czech Republic; France; Germany; Hungary; India; Italy; Japan; Netherlands; Norway; Poland; Russian Federation; Spain; Sweden; Switzerland; United Kingdom of Great Britain and Northern Ireland and United States of America. An expert from the European Commission (EC) participated. Experts from the following non-governmental organizations also participated: European Association of Automobile Suppliers (CLEPA); International Motorcycle Manufacturers Association (IMMA); International Organization for Standardization (ISO); International Organization of Motor Vehicle Manufacturers (OICA). Upon the special invitation of the Chairman, experts from the following non-governmental organizations participated: European Tyre and Rim Technical Organization (ETRTO); National Federation of the Blind (NFB); European Federation for Transport and Environment (T&E); Transportation Technical Supervision (TDT); Specialty Equipment Market Association (SEMA) and European Tuning Organization (ETO).

## **II. Adoption of the agenda (agenda item 1)**

*Documentation:* ECE/TRANS/WP.29/GRB/2010/1

2. GRB considered and adopted the agenda proposed for the fifty-first session (ECE/TRANS/WP.29/GRB/2010/1). Regarding agenda item 11, GRB recommended to amend the title to read “Quiet Road Transport Vehicles”. The informal documents distributed during the session are listed in Annex I to this report.

## **III. Regulation No. 28 (Audible warning devices) (agenda item 2)**

*Documentation:* ECE/TRANS/WP.29/GRB/2010/2, Informal documents Nos. GRB-51-06 and GRB-51-10

3. The expert from China withdrew ECE/TRANS/WP.29/GRB/2010/2. GRB noted the comments by experts from India (GRB-51-06) and the Russian Federation (GRB-51-10). The experts from France and Italy preferred to keep Regulation No. 28 in its current status. GRB agreed to resume consideration of both informal documents at a later stage, awaiting further test results by the expert from China. GRB also agreed to remove, in the meantime, this item from the agenda.

## **IV. Regulation No. 41 (Noise of motorcycles) (agenda item 3)**

*Documentation:* ECE/TRANS/WP.29/GRB/2009/3, Informal document No. GRB-51-16

4. Recalling the discussion of GRB at its previous session regarding ECE/TRANS/WP.29/GRB/2009/3, the expert from IMMA introduced GRB-51-16 reflecting the position of his organization on additional information on the manufacturer’s plate, a new type approval test based on standard ISO 362-2 and additional sound emission provisions. GRB noted some comments and recommended that the informal group on

Regulation No. 41 should meet again to resolve the remaining open issues. This meeting is scheduled to be held in Geneva on 20-21 April 2010 (Palais des Nations, Room II).

5. GRB agreed to resume consideration of this subject at its next session in September 2010, on the basis of a revised official document prepared by the informal group. The Chairman invited the informal group to also start its discussion on limit values including new provisions for anti tampering measures.

## **V. Regulation No. 51 (Noise of M and N categories of vehicles) (agenda item 4)**

### **A. Development (agenda item 4(a))**

*Documentation:* ECE/TRANS/WP.29/GRB/2009/6, Informal documents Nos. GRB-51-08, GRB-51-08-Rev.1, GRB-51-13 and GRB-51-20

6. Recalling the purpose of ECE/TRANS/WP.29/GRB/2009/6, the expert from OICA introduced GRB-51-08 to align the requirements of Regulation No. 51 regarding the conditioning of mufflers containing absorbing fibrous materials with those of Regulation No. 59. GRB noted a number of comments and adopted the proposal as reproduced in GRB-51-08-Rev.1. The secretariat was requested to submit it to WP.29 and AC.1, as draft Supplement 7 to the 02 series of amendments to Regulation No. 51, for consideration at their June 2010 sessions.

7. The expert from ISO announced his intention to prepare a proposal to update the provisions of Regulation No. 51 with regard to the stationary noise test. Referring to GRB-51-13, the expert from ETRTO reported on the torque influence on C3 category tyres. He expressed his concerns that tyres, which were type approved according to Regulation No. 117, should not be overruled by Regulation No. 51, 03 series of amendments. The expert from OICA introduced GRB-51-20 justifying that tyre road noise could be neglected because the new noise test method for heavy duty vehicles according to standard ISO 362-1 addresses the most important noise sources during the driving in urban areas by the wide open throttle test.

8. GRB noted a number of comments regarding the influence of torque on noise and agreed to resume consideration of this subject at its next session. For this purpose, GRB recommended to keep both GRB-51-13 and GRB-51-20 on the agenda as reference documents.

### **B. New sound limit values (agenda item 4(b))**

*Documentation:* Informal document No. GRB-51-07

9. Recalling his offer during the previous GRB session, the expert from India explained that data sets carried out on vehicle types of Indian manufacturers had been included in the data base as those vehicles have been type approved according to Regulation No. 51 (GRB-51-07).

10. The expert from EC informed GRB of the ongoing procedure to set up a proposal for new sound limit values and stated that a sub-contractor had started to analyse the data sets received during the monitoring process. He reported on some inconsistencies in the data delivered by the Type Approval authorities. In this respect, he announced his intention to organize an expert meeting on this subject in Brussels in June 2010. He volunteered to provide interim results to GRB at its next session.

### C. Additional sound emission provisions (ASEP) (agenda item 4(c))

*Documentation:* ECE/TRANS/WP.29/GRB/2009/4, ECE/TRANS/WP.29/GRB/2009/5, Informal documents Nos. GRB-51-04, GRB-51-05, GRB-51-17, GRB-51-19, GRB-51-21, GRB-51-22 and GRB-51-24

11. The expert from the Netherlands, chairing the informal group on Additional Sound Emission Provisions (ASEP), reported that only little progress had been made by the group during its sixteenth meeting held in Paris (France), from 8 to 10 December 2009 (GRB-51-21). He introduced GRB-51-05 concerning the current status of the draft amendments to Regulation No. 51 to incorporate the additional sound emission provisions. He informed GRB that the informal group could neither find an agreement on the revised proposal by the informal group (method 1) nor on the new proposal by the Netherlands (method 2). In this respect, he presented GRB-51-05 outlining the differences of both methods. GRB noted the support of the experts from France, Italy and Japan for method 1 and some sympathy by the expert from the United Kingdom for method 2. The expert from the United States of America underlined the complexity of the subject and reiterated his position on the need for accuracy and legal sustainability of the new ASEP test method. The expert from ISO referred to working paper No. GRBIG-ASEP-16-007 and showed that, for a detailed ASEP data analysis, the engine speed was important, but the vehicle speed and acceleration had also to be taken into consideration to understand the off-cycle noise emissions in this context. Thus, the expert from the United Kingdom introduced GRB-51-17 proposing to amend the definition of a “defeat device” and to add a definition for “irrational control strategy”. GRB requested the secretariat to distribute GRB-51-17 with an official symbol for consideration at the next session in September 2010.

12. The Chairman of the informal group on ASEP reported on the status of the group’s discussion on the exclusion from ASEP of some N<sub>1</sub> category vehicles (GRB-51-04). GRB noted a number of comments and recommended not to exclude at the present time some N<sub>1</sub> category vehicles from the scope of ASEP. OICA was invited to provide, for the next session of GRB, further detailed justification for the insertion of such derogation for ASEP.

13. The expert from OICA presented further analysis information on ASEP (GRB-51-22). He expressed his preference for method 1. He stated that both methods were nevertheless acceptable, but both had to be considered together with the new limit values. In this respect, the expert from the Netherlands presented the results of a stringency analysis of both methods for ASEP (GRB-51-19 and GRB-51-24).

14. Following the discussion, GRB agreed on the urgency to conclude, in a first step, the ASEP test method and to discuss the stringency of ASEP limit values in a further step. GRB welcomed the Chairman’s suggestion to prepare, jointly with the expert from ISO, a concrete proposal for amendments to Regulation No. 51 for consideration at the next session of GRB. GRB also agreed to keep ECE/TRANS/WP.29/GRB/2009/4 and ECE/TRANS/WP.29/GRB/2009/5 on the agenda as reference documents.

## **VI. Regulation No. 59 (Replacement silencing systems) (agenda item 5)**

*Documentation:* ECE/TRANS/WP.29/GRB/2008/5/Rev.2

15. Recalling the purpose of ECE/TRANS/WP.29/GRB/2008/5/Rev.2, the expert from CLEPA noted the amendments to Regulation No. 51 adopted under agenda item 4(a). GRB agreed to have, at its next session in September 2010, a final review of ECE/TRANS/WP.29/GRB/2008/5/Rev.2, subject to an agreement of GRB on the ASEP method.

## **VII. Regulation No. 92 (Replacement exhaust silencing systems for motorcycles) (agenda item 6)**

16. Referring to the ongoing work on Regulations Nos. 41 and 51 with regard to mufflers containing absorbing fibrous materials, the expert from IMMA recommended adapting the provisions of Regulation No. 92 accordingly. He volunteered to prepare an amendment to Regulation No. 92 and invited all experts to send him their proposals. GRB agreed to resume consideration of this subject at its next session.

## **VIII. Regulation No. 117 (Tyre rolling noise and wet grip adhesion) (agenda item 7)**

*Documentation:* ECE/TRANS/WP.29/GRB/2010/3, Informal documents Nos. GRB-51-01, GRB-51-02, GRB-51-03-Rev.1, GRB-51-09, GRB-51-11, GRB-51-12, GRB-51-14, GRB-51-23 and GRB-51-26

17. The expert from EC, chairing the joint GRRF/GRB informal group on Special Tyre Definitions (STD), reported on the progress made by the group during its third meeting held in Geneva on 16 November 2009. With regard to the new provisions for rolling resistance of tyres and new limit values for noise emissions, he introduced ECE/TRANS/WP.29/GRB/2010/3 as a result of the informal group's work. GRB welcomed that proposal and noted the outcome (GRB-51-03-Rev.1) of the discussion in GRRF at its February 2010 session on ECE/TRANS/WP.29/GRB/2010/3.

18. The expert from France presented GRB-51-14 proposing a number of corrections and amendments to ECE/TRANS/WP.29/GRB/2010/3. GRB noted the amendments proposed by the experts from Japan (GRB-51-23) and ETRTO (GRB-51-01). Following the discussion, GRB adopted ECE/TRANS/WP.29/GRB/2010/3 as reproduced in GRB-51-26 and requested the secretariat to submit it to WP.29 and AC.1, as draft 02 series of amendments to Regulation No. 117, for consideration at their June 2010 sessions (see ECE/TRANS/WP.29/2010/63).

19. GRB also noted GRB-51-02 and GRB-51-12 regarding the comments by ETRTO and ISO on GRB-50-07 presented by the Russian Federation at the previous GRB session. The expert from the Russian Federation introduced GRB-51-09 proposing amendments to ECE/TRANS/WP.29/GRB/2010/3 with regard to the test procedure and limit values for rolling resistance coefficients. The expert from Norway proposed some amendments to the approval and the conformity of production procedures (GRB-51-11). She also presented the results of a study of her government on snow braking and ice braking tests (GRB-51-25). GRB noted a number of comments and recommended that the informal group on STD should consider these proposals, as a further stage of amendments at its forthcoming

meeting. This meeting is scheduled to be held in Geneva on 26-27 May 2010 (Palais des Nations, Room IV).

20. GRB agreed to resume consideration of this subject at its next session in September 2010 on the basis of the results of the informal group.

### **IX. Collective amendments to Regulations Nos. 41 (Noise of motorcycles), 51 (Noise of M and N categories of vehicles) and 59 (Replacement silencing systems) (agenda item 8)**

21. GRB noted that no new information had been given under this agenda item and agreed to resume consideration of this subject at the next session of GRB on the basis of a concrete proposal by the expert from the Netherlands.

### **X. Exchange of information on national and international requirements on noise levels (agenda item 9)**

22. GRB noted that no new information had been given under this agenda item.

### **XI. Influence of road surface on tyre rolling sound emissions (agenda item 10)**

23. GRB noted that no new information had been given under this agenda item.

### **XII. Quiet road transport vehicles (agenda item 11)**

*Documentation:* Informal document No. GRB-51-18

24. The expert from the United States of America, chairing the informal group on Quiet Road Transport Vehicles (QRTV), reported on the outcome of the kick-off meeting held in Washington D.C. on 9 February 2010 and the first meeting of informal group held on 15 February 2010, prior to the GRB session proper. He presented the draft Terms of Reference and the rules of procedure agreed by the informal group (GRB-51-18). Referring to the progress of the informal group on Electric Safety (ELSA) under the Working Party on Passive Safety (GRSP) and the ongoing discussion in the Working Party on Pollution and Energy (GRPE) on environmentally friendly vehicles, the expert from France underlined the urgency of establishing new provisions for quiet vehicles.

25. GRB adopted the Terms of References and rules of procedure of the informal group on QRTV as reproduced in Annex II to this report. The Chairman volunteered to inform WP.29 in this respect. GRB agreed to resume consideration of this subject at its next session in September 2010.

### **XIII. Environmentally friendly vehicles (agenda item 12)**

*Documentation:* Informal documents Nos. GRPE-59-07 and GRPE-59-19

26. GRB welcomed the very positive conclusion paper (GRPE-59-07) of the fourth International Conference on EFV, held in New Delhi (India) on 23-24 November 2009. The Secretary informed GRB of the progress made during the fifth meeting of the informal

group on EFV which was held in New Delhi on 25 November 2009, in conjunction with the fourth EFV Conference (GRPE-59-19). He added that the meeting minutes of the informal group on EFV held in November 2009 and January 2010 were available at: <http://www.unece.org/trans/main/wp29/wp29wgs/wp29grpe/efv06.html>.

27. The Chairman congratulated the experts from India for good organization and good outcome of the fourth EFV Conference held in New Delhi. He added that the United States of America had volunteered to organize the fifth EFV Conference in his country in the beginning of 2012.

#### **XIV. Other business (agenda item 13)**

*Documentation:* Informal document No. GRB-51-15

28. Upon the request of Japan, the expert from France introduced GRB-51-15 clarifying the objectives of the Technical Service Group (TSG) on Child Restraint Systems (CRS) and safety Belts under the GRSP. He confirmed that the TSG expert group was open to all experts of the subsidiary Working Parties of the World Forum WP.29.

#### **XV. Provisional agenda for the fifty-second session**

29. The following provisional agenda was adopted for the fifty-second session of GRB, scheduled to be held in Geneva from 6 (starting at 2.30 p.m.) to 8 (concluding at 5.30 p.m.) September 2010:

1. Adoption of the agenda.
2. Regulation No. 41 (Noise of motorcycles): Development.
3. Regulation No. 51 (Noise of M and N categories of vehicles):
  - (a) Development;
  - (b) New limit values;
  - (c) Additional sound emission provisions.
4. Regulation No. 59 (Replacement silencing systems).
5. Regulation No. 92 (Replacement exhaust silencing systems for motorcycles).
6. Regulation No. 117 (Tyre rolling noise and wet grip adhesion):
  - (a) Development;
  - (b) Special tyre definition.
7. Collective amendments to Regulations Nos. 49, 51 and 59.
8. Exchange of information on national and international requirements on noise levels.
9. Influence of road surface on tyre rolling sound emissions.
10. Quiet Road Transport Vehicles (QRTV).
11. Environmentally Friendly Vehicles (EFV).
12. Election of officers
13. Other business.

## Annexes

### Annex I

#### List of informal documents (GRB-51-...) distributed during the session

<i>No.</i>	<i>Transmitted by</i>	<i>Agenda item</i>	<i>Language</i>	<i>Title</i>	<i>Follow-up</i>
1	ETRTO	7	E	ETRTO comments to ECE/TRANS/WP.29/GRB/2010/3	(a)
2	ETRTO	7	E	Comments on document No. GRB-50-07 by the Russian Federation	(a)
3-Rev1	Secretariat	7	E	Outcome of the 67th GRRF session on ECE/TRANS/WP.29/GRB/2010/3	(a)
4	ASEP	4(c)	E	N <sub>1</sub> vehicles and ASEP: State of the discussion	(a)
5	Chair of ASEP	4(c)	E	ASEP background document	(a)
6	India	2	E	India's comments on proposal for amendments to ECE Regulation No. 28 (Audible warning devices)	(a)
7	India	4(b)	E	Information from India on ECE Regulation No. 51	(a)
8-Rev1	OICA	4(a)	E	Proposal for amendments to Regulation No. 51	(a)
9	Russian Federation	7	E	Proposal for draft amendments to document ECE/TRANS/WP.29/GRB/2010/3 (Regulation No. 117)	(a)
10	Russian Federation	2	E/R	Comments by the Russian Federation in regards to the proposal by China for draft amendments to Regulation No. 28	(a)
11	Norway	7	E	Proposal for amendments to Regulation No. 117	(a)
12	ETRTO/ISO	7	E	Comments of the ISO/TC31/WG6 on informal document No. GRB-50-07	(a)
13	ETRTO	4(a)	E	Torque influence on C3 category tyres	(a)

<i>No.</i>	<i>Transmitted by</i>	<i>Agenda item</i>	<i>Language</i>	<i>Title</i>	<i>Follow-up</i>
14	France	7	E	Regulation No. 117: Proposal for amendments to ECE/TRANS/WP.29/GRB/2010/3	(a)
15	France	7	E	French clarification on proposal ECE/TRANS/WP.29/GRB/2010/3	(a)
16	IMMA	3	E	IMMA informal document on noise of motorcycles (Regulation No. 41)	(a)
17	United Kingdom	4(c)	E	Regulation No. 51: Additional Sound Emission Provisions (ASEP) - Proposal for amendments	(b)
18	United States of America	11	E	Proposed Terms of Reference for GRB informal group on Quiet Road Transport Vehicles	(a)
19	Netherlands	4(c)	E	ASEP Stringency analysis	(a)
20	OICA	4(a)	E	Noise emission of moving vehicles in urban areas	(a)
21	Netherlands	4(c)	E	Report of the GRB ad hoc working group ASEP	(a)
22	OICA	4(c)	E	Additional Sound Emission Provisions – Analysis information	(a)
23	Japan	7	E	Proposal for amendments to ECE/TRANS/WP.29/GRB/2010/3 (Regulation No. 117)	(a)
24	Netherlands	4(c)	E	ASEP Stringency analysis	(a)
25	Norway	7	E	Snow braking and ice braking tests	(a)
26	EC	7	E	Amendments adopted by GRB to ECE/TRANS/WP.29/GRB/2010/3 (Regulation No. 117)	(c)

## Notes:

- (a) Consideration completed or to be superseded.
- (b) Resume consideration on the basis of an official document.
- (c) Adopted by GRB and submitted to WP.29 for consideration.

## Annex II

### Terms of Reference and rules of procedure for the GRB informal group on Quiet Road Transport Vehicles (QRTV)

#### A. Terms of Reference

##### Problem

The advent of road transport vehicles that rely, in whole or in part, on alternative drive trains (e.g. electromotive propulsion) are serving to significantly reduce both air and noise pollution and their adverse impacts on citizens throughout the world. However, the very positive environmental benefits achieved to date by these “hybrid or pure electric” road vehicles have resulted in the unintended consequence of removing a source of audible signal that is used by various groups of pedestrians, (e.g. in particular blind and low vision persons), to signal the approach, presence and/or departure of road vehicles.

##### The World Forum WP.29

The UNECE World Forum WP.29 has determined that road transport vehicles propelled in whole or in part by electric means, present a danger to pedestrians. Further, the World Forum has directed GRB to assess and determine what, if any, steps might be taken by WP.29 to mitigate potential pedestrian hazards through the use of acoustic means, recognizing that other means of communication may also be appropriate.

##### GRB objective

GRB has established an informal working group to carry out the following activities that are considered essential to determine the viability of “quiet vehicle” audible acoustic signalling techniques and the potential need for their global harmonization.

##### Program plan

Phase I - Identify, review and assess the status of various research being carried out by various governments, universities and non-governmental organizations regarding audible signalling technologies for quiet vehicles and their respective mandated time frames. Complete by September, 2010 GRB meeting.

Phase II – Determine, based on survey and experimental investigation with blind and low vision people, those human factors believed necessary to decision making in vehicular traffic situations. Studies shall include both learned and intuitive information processing. Complete by September, 2010 GRB meeting.

Phase III – Transform human factor needs into technical performance parameters for road vehicles, including the types of vehicle movement and position information required by the blind, low vision and other persons to facilitate their safe passage, navigation and orientation in the presence of vehicular traffic.

Status report to GRB by February 2011.

Phase IV – Determine potential audible sound characteristics and mechanisms that convey desired vehicle performance information to the human receiver.

Status report to GRB at February, 2011 meeting.

Phase V – Determine technical and economic feasibility of those audible warning techniques deemed appropriate for “quiet vehicle” operations.

Status report to GRB at February, 2011 meeting.

Phase VI – Determine potential adverse impact on the public at large or existing vehicle noise emission standards and regulations.

Status report to GRB at September, 2011 meeting.

Phase VII – Present conclusions and recommendations to GRB.

Complete by February, 2012.

**B. Rules of procedure**

1. The informal group is open to all participants of GRB.
2. A Chairman and a Secretary shall govern the informal group.
3. The official language of the informal group shall be English.
4. All documents and/or proposals shall be submitted to the Secretary of the group in a suitable electronic format at least two weeks in advance of the meeting. The group may refuse to discuss any item or proposal which has not been circulated 10 working days in advance.
5. A draft agenda and related documents shall be circulated to all members of the informal group ten days in advance of all scheduled meetings.
6. The conclusions of the informal group shall be based on a majority vote of governmental members.
7. If the informal group cannot reach a common agreement, the proposals shall be presented to GRB, in order to take a decision.

## Annex III

### GRB informal groups

Informal group	Chairperson	Secretary
Motorcycle noise emissions (Regulation No. 41)	Mr. A. Erario (Italy) Tel: +39 06 4158 6228 Fax: +39 06 4158 3253 E-mail: antonio.erario@mit.gov.it	Mr. N. Rogers (IMMA) Tel: +41 22 920 2123 Fax: +41 22 920 2121 E-mail: nickrogers@immamotorcycles.org
Additional Sound Emission Provisions (ASEP)	Mr. B. Kortbeek (Netherlands) Tel: +31 70 339 4526 Fax: +31 70 339 1280 E-mail: boudewijn.kortbeek@minvrom.nl	Mr. H.P. Bietenbeck (OICA) Tel.: +49 221 90 32 409 Fax : +49 221 90 32 546 E-mail: hbietenb@ford.com
Special Tyre Definitions (STD)	Mr. W. Schneider (EC) Tel: +32 2 2965260 Fax: +32 2 2969637 E-mail: wolfgang.schneider@ec.europa.eu	Mr. I. Knowles (EC) Tel: +32 2 2957680 Fax: +32 2 2969637 E-mail: ian.knowles@ec.europa.eu
Quiet road transport vehicles (QRTV)	Mr. K. Feith (USA) Tel: +1 202 5641679 Fax: +1 202 5641545 E-mail: feith.ken@epa.gov	(1)
<hr/> <sup>(1)</sup> To be determined		