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ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonisation of Vehicle Regulations (WP.29)

Working Party on Noise (GRB)

### REPORT OF THE WORKING PARTY ON NOISE (GRB) ON ITS THIRTY-FOURTH SESSION

(20 to 23 February 2001)

#### ATTENDANCE

1. GRB held its thirty-fourth session from 20 February (afternoon only) to 22 February (morning only) 2001, under the chairmanship of Mr. H. Löffelholz (Germany). Experts from the following countries participated in the work, following Rule 1(a) of the Rules of Procedure of WP.29 (TRANS/WP.29/690): Czech Republic; Denmark; France; Germany; Hungary; Italy; Japan; Netherlands; Norway; Poland; Russian Federation; Slovakia; Spain; Switzerland; United Kingdom; United States of America. A representative of the European Commission (EC) participated. Experts from the following non-governmental organizations took part in the session: International Organization for Standardization (ISO); International Organization of Motor Vehicle Manufacturers (OICA); International Motorcycle Manufacturers Association (IMMA); European Tyre and Rim Technical Organization (ETRTO).

2. The documents without a symbol distributed during the session are listed in annex 1 to this report.

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GE.01-

PROPOSED NEW DRAFT REGULATION CONCERNING THE TYRE ROLLING SOUND EMISSION

Documentation: TRANS/WP.29/GRB/2000/4; TRANS/WP.29/GRB/2001/3; informal document No. 4 of annex 1 to this report. Also distributed was document TRANS/WP.29/1999/7 and informal document No. 1 of thirty-third GRB session

3. The expert from the European Commission briefed GRB on the progress on a new European Community Directive regarding tyre rolling sound emission. He said that the process was slower than expected and the conciliation procedure should start in March. He envisaged more information from the Parliament and the Council for the next meeting of GRB.

4. The expert from ETRTO asked to review the proposed changes to the Directive's requirements (informal document No. 4.). He reported that the European Parliament had attempted to reduce the tyre rolling sound emission level without consideration for measurement procedures or production feasibility. He expressed concern that, in an attempt to meet the sound emission levels proposed by the European Commission, tyre safety could be jeopardized. The tyre industry had asked for more study that would include consideration of the impact of the new tyre rolling sound emission levels on vehicle safety.

5. The expert from the United Kingdom informed GRB that GRRF was considering aspects of the tyre's wet grip. He stressed the good co-operation between the tyre industry and GRRF. The group was discussing two test protocols, one using an actual vehicle and the second using a test trailer. Candidate tyres would be compared with the base/reference tyre and the correlation between the tests would be established. Since there was no truck reference tyre, one has to be created. He reported that there was no known relation between tyre grip and the tyre rolling noise emission and that rolling resistance levels also had to be taken into account. GRRF would come up with the test method for wet grip and rolling resistance by the end of 2003. The expert from the United Kingdom informed GRB that there were ISO test methods regarding this subject. However, as they were standards not Regulations they did not specify acceptable values nor appropriate labelling requirements.

6. GRB considered document TRANS/WP.29/2000/4. This document was discussed in detail during the previous, thirty-third session of GRB. The changes agreed upon were annexed to the report (TRANS/WP.29/GRB/31, annex 2).

7. The expert from ETRTO pointed out that, in annex 1, item 4. of the draft proposal, as corrected during the thirty-third session, an additional correction was necessary. He also requested two corrections to the document TRANS/WP.29/2000/4 itself. These were agreed by GRB and are reproduced below. Concerning the ISO standards, he said that they contain two different test methods leading to the same conclusions.

Annex 1, item 4, correct to read:

"4. Brand(s) name and/or Trade description(s) of the type of tyre: ..."

Annex 4,

Paragraph 3.1., correct the reference to "annex 9, appendix 1, paragraph 3.2." to read "annex 3, paragraph 3.2."

Paragraph 4.2., amend to read (deleting also footnote 2/):

"... specified in ISO 10534-1:1996 or ISO 10534-2:1998.

Regarding test specimens, ..."

8. GRB agreed to continue its consideration of document TRANS/WP.29/GRB/2000/4 during the next session, awaiting further development in the European Community.

9. The expert from ETRTO requested that GRB revisit two documents from the thirty-third session: TRANS/WP.29/1999/7 and informal document No. 1. In response, the expert from the United Kingdom stated that he was going to prepare, for the next GRB session, a working document combining the two documents. The expert from ETRTO accepted such course of action.

10. The expert from Germany introduced document TRANS/WP.29/2001/3. It laid out the introductory provisions in a spirit of aligning the application dates of the new tyre rolling noise Regulation with those foreseen in the draft European Community Directive. During the discussion, it was suggested that in paragraph 12.6. the word "may" be changed to "shall". Furthermore, in paragraphs 12.5. and 12.6. the dates were put in square brackets, indicating that they were only provisional.

11. The question was raised with regard to the designation of the approved laboratories (para. 12.6.). After a short discussion, it was confirmed that the wording of the proposal allowed the type approval testing to be performed by the type approval authority in the manufacturers' laboratories, not designated as approved laboratories, under the condition that the type approval authority would oversee and witness any test related to type approval.

12. GRB accepted document TRANS/WP.29/2001/3 in principle, but agreed to resume its consideration during the next meeting when more information might be available concerning the draft European Community Directive.

#### AMENDMENTS TO ECE REGULATIONS

- (a) Regulation No. 51 - development  
(Noise of M and N categories of vehicles)

Documentation: TRANS/WP.29/GRB/2001/2, TRANS/WP.29/GRB/2001/4; informal documents Nos. 1, 2, 3, 7, 8, 9, 10 and 11 of annex 1 to this report.

13. The expert from the United Kingdom proposed the creation of an informal group, which would meet more frequently to advance the progress of development of an improved test method for the Regulation regarding the noise emission of M and N vehicles. He said that he had been encouraged with the current state of development and was interested in faster progress.

14. Considering the proposal, it was pointed out that ISO was already working on this subject outside of the GRB sessions. The expert from ISO said that the working group had 10 members, which, although not directly representing Governments, were informing their respective Governments of the progress in ISO work. Comments were made that the creation of an ad-hoc group could lead to splitting of the focus of work and the resources. It was agreed that GRB would dedicate more time during its regular sessions to the development of Regulation No. 51. If necessary, a proposal to assign the work to an informal group could be reconsidered later.

15. The expert from Germany made a presentation (informal document No. 11) regarding the noise emission of motor vehicles. It compared noise emission at different gears and associated noise levels proposed by OICA, Netherlands and Germany. The contributing tyre rolling sound emission level values were calculated on the basis of the "quiet" tyre and the ISO test surface. The presentation raised several questions regarding directions of further effort aimed at the development of a more acute test method.

16. The expert from the Netherlands presented informal documents Nos. 7 and 8 regarding the Dutch approach to evaluating the vehicle noise emission. He briefly reviewed the relation between noise emission and health, nuisance, cost and the overall quality of life. To better control vehicle noise emission, the expert from the Netherlands suggested to implement the source related measures, specifically a separate test for tyres and for the power-train. He suggested a steady speed test for the tyres and several tests for the power-train at predetermined settings. His presentation led to the introduction of document TRANS/WP.29/GRB/2001/4, although the document was not discussed in any detail.

17. When introducing informal document No. 9, the expert from the Netherlands suggested creating a two-mode type approval system. First, the drive-by test at 50 km/h, and second, a single event test, the acceleration from 20 to 35 km/h. He provided justification for his proposal.

18. The expert from Denmark agreed with the suggested principles. He stated that, since there were two sources of noise, there was a need for two tests and two limits. GRB should focus separately on vehicle noise (exhaust, engine etc.) during the speed change and on tyre rolling noise emission at higher speeds.

19. From the exchange of views, it was apparent that substantive noise limit reductions in Regulation No. 51 had only a limited effect in the reduction of the urban traffic noise nuisance.

20. The expert from ISO introduced informal document No. 10, updating his original proposal (TRANS/WP.29/2001/2). The procedure described in the document was based on the development of the ISO 362 test method. The proposed procedure did not tie the performance of the transmission to certain gears but to the acceleration rate. A vehicle would have to reach the microphones at the speed of 50 km/h. At higher speed the transmission could be forced (electronically) to work at one gear lower than it would tend to be. ISO was considering development of an indoor test procedure. He requested that the GRB experts submit comments on the ISO proposal by early June, directly for his attention.

21. In conclusion of the discussion on development of Regulation No. 51 a list of questions was developed (see annex 2). This list originated from the consideration by GRB of the German presentation (informal document No. 11). GRB agreed that the experts should send written comments to the secretariat before 30 April. These questions and comments received would then form the basis for an in-depth discussion during the next GRB session in September 2001.

22. Informal documents Nos. 1, 2 and 3, that contained German proposals for a new noise test method were not discussed.

23. The expert from Japan informed GRB of his intention to present at the next session the results of the Japanese evaluation of the various methods of motor vehicle noise measurements.

(b) Regulation No. 41 (Noise of motorcycles)

24. GRB noted the absence of any follow-up of the consideration of a proposal by Belarus (TRANS/WP.29/GRB/2000/3) and, because of the initial disagreement during the thirty-second GRB session (TRANS/WP.29/GRB/30, paras. 31-33), decided to remove this item from its agenda.

EXCHANGE OF INFORMATION ON NATIONAL AND INTERNATIONAL REQUIREMENTS ON NOISE LEVELS

25. Besides the information from the European Community (see para. 3 above), no information was presented.

FUTURE CANDIDATE GLOBAL TECHNICAL REGULATIONS

26. The GRB Chairman reported that WP.29 and the Executive Committee of the Global Agreement continued to deliberate priorities for establishing future global technical regulations (GTR). He offered his opinion that an updated Regulation No. 51 could become a candidate.

27. GRB agreed to await instructions from WP.29 concerning the work under the Global Agreement and, if necessary, adapt its own work accordingly.

OTHER BUSINESS

(a) Proposal for a draft corrigendum to Regulation No.59

Documentation: Informal documents Nos. 5 and 6 of annex 1 to this report.

28. The expert from the Russian Federation introduced informal document No. 5 suggesting to extend the scope of Regulation No. 59 to all M

and N vehicles, to review the list of the Contracting Parties to the Agreement and to amend paragraphs 3.3.3., 6.2.1., 6.2.1.1, and 6.2.1.2. by adding wording, which would clearly suggest that the replacement components would have to meet the provisions of the version of Regulation No. 51, which had been in force when the original approval was granted.

29. The discussion, which followed, revealed that the scope of the Regulation was purposely limited to M1 and N1 vehicles. A similar proposal had already been examined by GRB in the past with the conclusion that there was no market for replacement exhaust systems for heavy-duty vehicles.

30. The expert from OICA stated that replacement exhaust systems for heavy-duty vehicles differed distinctly from those of light vehicles and to have them included in the scope of Regulation No. 59 would require its thorough revision.

31. The expert from the Russian Federation stated that, in his country, a market existed for replacement exhaust systems for heavy-duty vehicles. Although GRB agreed to consider the proposal by the Russian Federation, it was suggested as an interim solution that the authorities could use the ISO 5130, which included test methods for exhaust noise measurement of both heavy- and light-duty vehicles.

32. With respect to the update of the list of Contracting Parties, GRB was informed that this list was updated periodically by the secretariat, whenever the Regulations were revised or updated for other reasons.

33. With regard to the third amendment, GRB agreed that it was important to use for the approval of a replacement exhaust system the same methods and limits as for the original equipment of the vehicle in question.

34. The expert from the Russian Federation introduced also informal document No. 6 proposing, for the Russian language only, to replace the references to "replacement silencing system" by "replacement exhaust system".

35. The discussion revealed that there was merit in examining the issue more thoroughly, similar to the modifications, which had been done for Regulation No. 92, in its Supplement 1.

36. The expert from the Russian Federation accepted the invitation by GRB to propose for consideration at the next session amendments to Regulation No. 59, parallel to those in Supplement 1 to Regulation No. 92, as a follow-up to his original suggestion (informal document No. 6).

AGENDA FOR THE NEXT SESSION

37. The following agenda was agreed for the thirty-fifth session, scheduled to be held in Geneva on 13 (9.30h) and 14 (until 17.30h) September 2001 1/:

1. Proposed new draft Regulation concerning the tyre rolling sound emission
2. Amendments to ECE Regulations
  - 2.1. Regulation No. 51 - development (Noise of M and N categories of vehicles)
  - 2.2. Regulation No. 59 - (Replacement silencing systems)

3. Exchange of information on national and international requirements on noise levels 2/
4. Future candidate global technical regulations (GTR)
5. Other business

1/ As part of the secretariat's efforts to reduce expenditure, all the official documents distributed prior to the session, by mail and/or placed on the web-site, will not be available in the conference room for distribution to session participants. Delegates are kindly requested to bring their copies of documents to the meeting. (The web-site address of the GRB documents: <http://www.unece.org/trans/main/wp29/wp29wgs/wp29grb.html>)

2/ Delegations are invited to submit brief written statements on the latest status in national requirements and, if necessary, to supplement this information orally.

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Annex 1

## LIST OF INFORMAL DOCUMENTS DISTRIBUTED WITHOUT A SYMBOL DURING THE SESSION

No.	Transmitted by	Agenda item	Language	Title
1.	Germany	2.1.	E	Regulation No.51: Survey of proposals for amendment to the Regulation and Annex 3
2.	Germany	2.1.	E	Regulation No.51: Survey of proposals for amendments to the Regulation and Annex 3; Background information
3.	Germany	2.1.	E	Working document for a proposal for draft amendments to Regulation 51
4.	ETRTO	1.	E	Tyre/Road Noise Directive; Position of tyre industry after the 2nd reading at European Parliament.
5.	Russian Federation	5.1	E/R	Proposal for draft amendments to Regulation No. 59 (Replacement silencing system)
6.	Russian Federation	5.1	E/R	Proposal for a draft corrigendum to Regulation No.59 (Replacement silencing system)
7.	Netherlands	2.1.	E	Noise really a problem. (copy of presentation overheads)
8.	Netherlands	2.1.	E	Prevalence of acceleration at low speed ( $\leq 50$ km/h) and driving at constant low speed ( $\leq 50$ km/h) and the influence on community annoyance.
9.	Netherlands	2.1.	E	The need for a two mode noise type approval. (copy of presentation overheads)
10.	ISO	2.1	E	Replacement for document TRANS/WP.29/GRB/2001/2
11.	Germany	2.1	E	Noise emission of motor vehicles. (copy of presentation overheads)

Annex 2QUESTIONS TO BE ANSWERED WHEN CONSIDERING A TEST METHOD FOR UPDATING  
REGULATION No. 51

1. Which noise source should be addressed?
    - mainly propulsion noise?
    - propulsion and tyre rolling sound emission?
    - mainly tyre rolling sound emission?
  2. Is it meaningful to include a constant speed test if the result is dominated by tyre rolling sound emission?
  3. Is it meaningful to include tyre rolling sound emission if the manufacturer can choose the test tyre?
  4. What type of road should be addressed?
    - residential streets?
    - urban main streets?
  5. What vehicle speed range should be used?
  6. How should the target acceleration be defined?
  7. What limit of acceleration would avoid an excessive torque generated noise of tyres?
  8. If a partial load test is used for the vehicle, is there a need for an additional test for the acoustic performance of silencers?
  9. Is a fixed vehicle speed suitable for the acceleration test since the gearshift behaviour is engine speed related rather than vehicle speed related?
  10. What is the final target for regulating vehicle noise?
    - when is the vehicle sufficiently silent?
    - what are the safety related limits?
  11. Are additional specifications necessary to avoid test cycle by-passing?
  12. How to handle the adoption of new limits with new test procedures?
  13. Is there an environmental advantage of averaging test values?
  14. When the tyre rolling sound emission influence the test, should the limits be dependent on the width of the tyres?
  15. What should be test conditions and accuracy?
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