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**Economic Commission for Europe**
**Inland Transport Committee**
**World Forum for Harmonization of Vehicle Regulations**
**Working Party on General Safety Provisions**
**110<sup>th</sup> session**

Geneva, 26 – 29 April 2016

**Report of the Working Party on General Safety Provisions  
 on its 110<sup>th</sup> session (26 – 29 April 2016)**
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## I. Attendance

1. The Working Party on General Safety Provisions (GRSG) held its 110<sup>th</sup> session from 26 to 29 April 2016 in Geneva. The meeting was chaired by Mr. A. Erario (Italy). 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, ECE/TRANS/WP.29/690/Amend.1 and Amend.2): Belgium, Canada, China, Finland, France, Germany, Hungary, Israel, Italy, Japan, Kuwait, Luxembourg, Netherlands, Norway, Poland, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Spain, Sweden, Switzerland, Turkey and United Kingdom of Great Britain and Northern Ireland (UK). An expert from the European Commission (EC) also participated. Experts from the following non-governmental organizations participated: European Association of Automotive Suppliers (CLEPA), European Liquefied Petroleum Gas Association (AEGPL), International Motorcycle Manufacturers Association (IMMA), International Road Transport Union (IRU), International Organization of Motor Vehicle Manufacturers (OICA), International Organization for Standardization (ISO), International Road Transport Union (IRU), International Association for Natural Gas Vehicles (NGV Global) and the International Association of Public Transport (UITP). Upon the special invitation of the Chair, an expert from the Fédération Internationale de l'Automobile (FIA) and the International Association of the Body and Trailer Building Industry (CLCCR) participated.

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

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/1 and Add.1  
Informal document GRSG-110-01

2. GRSG considered and adopted the agenda proposed for the 110<sup>th</sup> session (ECE/TRANS/WP.29/GRSG/2016/1 and Add.1).

3. GRSG also adopted the running order for the session as proposed by the Chair in GRSG-110-01. GRSG noted the main decisions of the World Forum WP.29 taken during its sessions of November 2015 and March 2016 (reports ECE/TRANS/WP.29/1118 and ECE/TRANS/WP.29/1120). GRSG experts expressed their concerns about the cut of a G-post in the vehicle regulations section and underlined the importance of the secretariat services to the World Forum WP.29 and its six subsidiary bodies. GRSG requested the UNECE management to find a quick solution to ensure the proper administration of the three agreements under the responsibility of WP.29.

4. The informal documents distributed during the session are listed in Annex I to this report. The GRSG informal working groups are listed in Annex V.

## III. Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles) (agenda item 2)

### A. Proposals for further amendments

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/21  
ECE/TRANS/WP.29/GRSG/2016/5  
Informal documents GRSG-110-03, GRSG-110-04,  
GRSG-110-08-Rev.1, GRSG-110-09 and GRSG-110-21

5. Recalling the discussion on ECE/TRANS/WP.29/GRSG/2015/21 at the previous GRSG session, the expert from Romania introduced GRSG-110-03 clarifying the requirements on seat spacing and superseding the official document. The expert from OICA introduced GRSG-110-09 amending the provisions on the use of the gauging devices in the case of monitor or display devices mounted at the ceiling of buses and coaches. The expert from Italy presented GRSG-110-21 to align the 05, 06 and 07 series of amendments of UN Regulation No. 107 with the requirements of Supplement 4 to the 04 series of amendments concerning barriers in the gangway and the amount of priority seats in buses and coaches. GRSG adopted the proposals as reproduced in Annex II to the report and requested the secretariat to submit them to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft Supplements to the 04, 05, 06 and 07 series of amendments to UN Regulation No. 107.

6. The expert from Belgium presented ECE/TRANS/WP.29/GRSG/2016/5 proposing to remove the new safety prescriptions for trolleybuses from UN Regulation No. 107 and insert them into UN Regulation No. 100 on electric power trained vehicles. The expert from UK raised concerns about the differences in the scopes of both Regulations and their application to trolleybuses. GRSG noted the comments by the Working Party on Lighting and Light-Signalling (GRE) about possible alignments of UN Regulations Nos. 107 and 116 with UN Regulation No. 10 on electromagnetic-compatibility (GRSG-110-04). The expert from OICA introduced GRSG-110-08-Rev.1 on the applicability of UN Regulation No. 100 versus Annex 12 of UN Regulation No. 107 with respect to electrical safety provisions. The expert from France explained that the origin of the current problem of trolleybuses was linked to the application of the European Union (EU) legislation on whole vehicle type approval. The expert from Japan informed GRSG about the intention of the Chair of GRE to seek the advice of WP.29 on this subject at the forthcoming session in June 2016. The GRSG Chair questioned the need to also involve the experts of the Working Party on Passive Safety (GRSP) in charge of UN Regulation No. 100. A number of experts expressed their preference to keep the electric safety provisions within UN Regulation No. 107. Thus, GRSG agreed that the experts of the Working Parties concerned should work on a simple solution avoiding further burden for public transport operators. The expert from Belgium volunteered to conduct a more detailed analysis on the compatibility or incompatibility of the scopes and technical provisions for trolleybuses of UN Regulations Nos. 10, 100 and 107.

7. GRSG agreed to resume consideration of this subject at its next session in October 2016 awaiting the outcome of the analysis by Belgium. GRSG requested the secretariat to keep ECE/TRANS/WP.29/GRSG/2016/5 on the agenda as a reference document.

## **B. Requirements for service doors, windows and emergency exits**

8. GRSG noted no new proposal under this item and agreed to remove it from the provisional agenda of the next session.

## **IV. Regulation No. 39 (Speedometer/odometer) (agenda item 3)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/16 and Corr.1  
Informal documents GRSG-109-13 and GRSG-110-17

9. Recalling the purpose of ECE/TRANS/WP.29/GRSG/2015/16 presented at the previous session of GRSG, the expert from FIA reiterated his position on the need to protect odometer equipment against mileage fraud and, therefore, to place the subject in a broader context. He introduced GRSG-110-17 on the current status of the discussion on

cyber security in the subgroup Autonomous Driving of the WP.29 informal working group on Intelligent Transport Systems (ITS-AD). He proposed to further discuss with OICA experts the security and functional safety specifications of ISO standards 26262 and 15408 on cyber security, data protection and remote access to in-vehicle data. The expert from OICA announced his intention to coordinate, in the near future, a common position from his stakeholder and volunteered to report back to GRSG at the forthcoming session.

10. The GRSG Chair suggested resuming consideration of this subject at the next session of GRSG and invited the expert from FIA to get in contact with OICA.

11. The expert from EC recalled the discussion of GRSG at its previous session on GRSG-109-13 proposing to amend the requirements for numeric displays of speedometers. The expert from France underlined the need to also indicate on the speedometer the corresponding speed units. The expert from OICA volunteered to prepare, together with the expert from EU, a joint proposal for consideration at the next GRSG session. The expert from IMMA reminded GRSG that some vehicles of category L should be added.

12. GRSG agreed to resume consideration of this subject at its next session on the basis of an official document to be jointly prepared by the experts from EC, IMMA and OICA taking into account the comments received.

## **V. Regulation No. 43 (Safety glazing) (agenda item 4)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/3  
ECE/TRANS/WP.29/GRSG/2015/22

13. The expert from CLEPA withdrew ECE/TRANS/WP.29/GRSG/2015/3.

14. The expert from Hungary introduced ECE/TRANS/WP.29/GRSG/2015/22 clarifying the technical requirements on the abrasion test machine. The expert from Germany informed GRSG about the status of work in ISO on abrasion test machines. He expected that the corresponding ISO standard would hopefully be published by the end of 2016. GRSG agreed to resume consideration of ECE/TRANS/WP.29/GRSG/2015/22 at its next session in October 2016, awaiting the publication of the ISO standard.

## **VI. Regulation No. 46 (Devices for indirect vision) (agenda item 5)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/12  
Informal documents GRSG-110-10, GRSG-110-11, GRSG-110-12  
and GRSG-110-28

15. The expert from the Russian Federation introduced ECE/TRANS/WP.29/GRSG/2016/12 proposing to correct editorial errors in the Russian version of UN Regulation No. 46. GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as Corrigenda to the 03 and 04 series of amendments to UN Regulation No. 46.

16. The expert from Germany proposed to also correct the provisions of paragraph 6.2.1.2. on the latency of devices for indirect vision with those of paragraph 6.2.2.3.4.3. on camera monitor systems (GRSG-110-28). GRSG endorsed the proposed text as reproduced below:

*Paragraph 6.2.1.2., amend to read:*

"6.2.1.2. If a device for indirect vision ..... the total process of scanning, rendering and reset to its initial position together shall not take more than **200 milliseconds at room temperature of 22 °C ±5 °C.**"

17. The secretariat was requested to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft Supplement 4 to the 04 series of amendments to UN Regulation No. 46, subject to a final review by GRSG at its next session in October 2016.

18. On behalf of the Task Force (TF) on UN Regulation No. 46, the expert from Japan reported on the progress made by the group during the recent meeting held prior to the GRSG session. He gave a presentation on detailed results of a national study on fatal accidents of pedestrians with motor vehicles at low speed (GRSG-110-10). He invited GRSG experts to provide the results of similar studies in their country, if available. He concluded that a possible solution to avoid such accidents could be new requirements to ensure the driver's view on the proximity area of the front and rear surroundings of the vehicle (GRSG-110-11). He referred to GRSG-110-12 proposing a first set of amendments to UN Regulation No. 46. GRSG welcomed the detailed information from Japan.

19. The expert from Germany reported on some investigations in his country on such accident types and expressed his preference to address this problem through a driver warning system, such as the driver assist systems so as to avoid blind spot accidents referred to in item 22 (see paras. 60-61 below), instead of a close-proximity and rear-view device proposed in GRSG-110-12. The expert from UK informed GRSG about a study of his department on the detection of vulnerable road users by vehicle sensors. He underlined that there was still a challenge to give the driver enough time for reaction to avoid a collision. The expert from Canada reported on some investigations in his country during the last five years on accidents of heavy goods vehicles with pedestrians or cyclists and expressed his full support to the GRSG activities on this subject. The expert from France endorsed the comments received and expressed his preference for a detection and driver warning system. Taking a broader view on the discussion, the expert from OICA stated that the Working Party on Brakes and Running Gears (GRRF) had already detailed considerations of obstacle detection systems when developing provisions for UN Regulation No. 131 on Advanced Emergency Brake Systems (AEBS).

20. Following the discussion, GRSG recommended the TF to go forward stepwise and to resume discussion on this subject in a broader view for light- and heavy-duty vehicles. Thus, the Chair of GRSG invited all experts to participate in the activities of the TF and to provide detailed data on accidents of such vehicles with pedestrians and cyclists in their country. GRSG agreed to resume consideration at its next session and to keep GRSG-110-12 on the agenda as a reference document.

## **VII. Regulation No. 55 (Mechanical couplings) (agenda item 6)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/4

21. The expert from Poland informed GRSG about the purpose of ECE/TRANS/WP.29/GRSG/2016/4, proposing to insert into UN Regulation No. 55 an amendment imposing a new general constraint for granting component type-approval for mechanical coupling devices dedicated to category M<sub>1</sub> vehicles only if they were designed to tow trailers. He announced the submission of the document to GRRF for consideration at its next session in September. GRSG endorsed that position and agreed to remove the agenda item.

## **VIII. Regulation No. 60 (Driver operated controls (mopeds/motorcycles) (agenda item 7))**

*Documentation:* ECE/TRANS/WP.29/2016/27

22. Recalling its decision at the previous session, GRSG reviewed the proposal by IMMA on the identification of controls, tell-tales and indicators on two-wheeled motorcycles and mopeds. GRSG reconfirmed the adoption of the proposed amendments to UN Regulation No. 60 as reproduced in ECE/TRANS/WP.29/2016/27 and its submission to WP.29 and AC.1 for consideration at their forthcoming sessions in June 2016.

## **IX. Regulation No. 66 (Strength of superstructure (buses)) (agenda item 8)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/11  
Informal document GRSG-110-16

23. The expert from OICA introduced ECE/TRANS/WP.29/GRSG/2016/11 proposing to amend the provisions of UN Regulation No. 66 with respect to intrusion into residual space during the roll over test. The expert from UK presented GRSG-110-16 suggesting an alternative text.

24. GRSG endorsed in general the proposal but noted concerns about the wordings "no risk of contact". GRSG invited the experts from UK and OICA to review the proposed text and agreed to resume consideration of ECE/TRANS/WP.29/GRSG/2016/11 at its next session and to keep both documents on the agenda as reference documents.

## **X. Regulation No. 67 (LPG vehicles) (agenda item 9)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/35  
ECE/TRANS/WP.29/GRSG/2016/7  
Informal documents GRSG-110-13 and GRSG-110-25

25. The expert from AEGPL introduced GRSG-110-13, superseding his proposal ECE/TRANS/WP.29/GRSG/2015/35 and proposing new provisions to prevent a flow of liquefied petroleum gas (LPG) into the petrol or diesel tank, and vice versa. GRSG noted general support on the updated proposal. Following a study reservation by the expert from France, GRSG decided to have a final review of the proposal at its next session in October 2016 and requested the secretariat to circulate GRSG-110-13 with an official symbol.

26. Recalling the purpose of ECE/TRANS/WP.29/GRSG/2016/7, the expert from the Netherlands presented GRSG-110-25 amending the provisions of UN Regulation No. 67 on LPG vehicles to allow Class 0/I hoses with couplings using gas tubes other than seamless material. GRSG noted a number of comments on the need for detailed testing specifications for type approval purposes and for clarification of the responsibilities. The Chair of GRSG invited all experts to send their written comments to the expert from the Netherlands. GRSG agreed to resume consideration of this subject at its next session in October 2016 on the basis of an updated official document by the Netherlands taking into account the comments received.

## **XI. Regulation No. 73 (Lateral protection devices) (agenda item 10)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/2  
Informal document GRSG-110-20-Rev.1

27. The expert from UK reminded GRSG about the purpose of document ECE/TRANS/WP.29/GRSG/2016/2 (based on GRSG-109-17) amending the scope of the Regulation to ensure that as many vehicles as possible were fitted with a lateral protection device. The expert from CLCCR supported the proposal in principle, but preferred to insert derogations for some niche products (GRSG-110-20-Rev.1). GRSG noted a number of comments.

28. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to keep ECE/TRANS/WP.29/GRSG/2016/2 and GRSG-110-20-Rev.1 on the agenda as reference documents. Thus, the expert from UK volunteered to prepare a revised document for a final review at the forthcoming GRSG session, taking into account the comments received.

## **XII. Regulation No. 105 (ADR vehicles) (agenda item 11)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/13 and its Corr.1  
Informal document GRSG-110-07

29. GRSG noted ECE/TRANS/WP.29/GRSG/2016/13 (tabled by the secretariat) to align the provisions of UN Regulation No. 105 with those of the new 2017 edition of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). The expert from the Netherlands presented GRSG-110-07 proposing some further corrections to ECE/TRANS/WP.29/GRSG/2016/13.

30. GRSG adopted the proposal as reproduced in Annex III to this report and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft 06 series of amendments to UN Regulation No. 105, subject to a final review by the Working Party on the Transport of Dangerous Goods (WP.15) at its May 2016 session and GRSG at its next session in October 2016. (*Note by the secretariat: WP.15 endorsed the proposed amendments.*)

## **XIII. Regulation No. 110 (CNG and LNG vehicles) (agenda item 12)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/36  
ECE/TRANS/WP.29/GRSG/2016/6  
ECE/TRANS/WP.29/GRSG/2016/8  
ECE/TRANS/WP.29/GRSG/2016/9  
ECE/TRANS/WP.29/GRSG/2016/10  
Informal documents GRSG-110-05, GRSG-110-23, GRSG-110-26  
and GRSG-110-27

31. The expert from OICA recalled the discussion at the previous GRSG session on ECE/TRANS/WP.29/GRSG/2015/36 proposing to amend the provisions of UN Regulation No. 67 to allow the installation of autonomous CNG heaters for the heating of the engine. The expert from Germany presented GRSG-110-27 further clarifying the text of paragraph 18.5.1.3.



32. GRSG adopted the proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft Supplement 5 to the 01 series of amendments to UN Regulation No. 110.

*Paragraph 18.5.1.3.*, amend to read:

"18.5.1.3. Notwithstanding the provisions of paragraph 18.5.1.2.

- (a) the automatic cylinder valve may stay in an open position during commanded stop phases, and
- (b) **in the case where a fire alarm system is installed in the compartment where a CNG combustion heater is located, the automatic cylinder valve(s) may be opened by an electronic control unit for the purpose of permitting its operation to warm the engine coolant."**

33. Reminding GRSG experts about the purpose of ECE/TRANS/WP.29/GRSG/2016/6, the expert from ISO introduced GRSG-110-05 proposing further amendments to UN Regulation No. 110 aimed at harmonizing the requirements for CNG cylinders with those of standard ISO 11439:2013. GRSG welcomed the work done by ISO. GRSG noted a number of study reservations and the request for a detailed justification of only referencing to ISO standards instead of reproducing the testing provisions. Following the recommendation by WP.29, GRSG underlined the need to have a static referencing of the international standards referred to in the proposal. A number of experts requested to have free access to these standards. The secretariat offered the possibility to make a copy of these standards available on the GRSG website, but protected by a password which will be circulated to the GRSG experts prior to the forthcoming GRSG session.

34. Following the discussion, the expert from ISO announced his intention to provide the secretariat with a copy of the most important standards referenced to in his proposal. He volunteered to submit in due time a revised official document for amending UN Regulation No. 110, taking into account the comments received.

35. The expert from the Netherlands introduced GRSG-110-26 (superseding ECE/TRANS/WP.29/GRSG/2016/8) proposing an amendment to UN Regulation No. 110 to allow Class 0 hoses with couplings using sealing technologies other than those with a 45° cone and, thus, to avoid design restrictive requirements. The proposal received a number of comments.

36. GRSG adopted the proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as part (see para. 32 above) of draft Supplement 5 to the 01 series of amendments to UN Regulation No. 110.

*Annex 4B, paragraph 1.6.2.2.*, amend to read:

"1.6.2.2. **The interface type for the hose coupling shall be:**

- (a) sealing cone of swivel-nut type of the type with a half vertical angle of 45°, **or**
- (b) **other couplings complying with the tests described in paragraph 1.7., as well as the tests mentioned in Annexes 5A and 5B.**

**In the case of an interface type using a soft seal body (e.g. O-ring), the type of material chosen shall be tested in accordance with Annexes 5D, 5F and 5G.**

**Couplings shall have complementary counterparts."**

37. The expert from the Netherlands presented ECE/TRANS/WP.29/GRSG/2016/9 aimed at correcting a typographical error and clarifying the current provisions of the Regulation. He also introduced ECE/TRANS/WP.29/GRSG/2016/10 proposing to insert provisions for LNG fuel connector as specified in ISO 12617:2015. Both documents received a number of comments. The expert from France raised a study reservation on the reference to the ISO standard in paragraph 2.2. of Annex 4J. Following the discussion, GRSG adopted both proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as part (see paras. 32 and 36 above) of draft Supplement 5 to the 01 series of amendments to UN Regulation No. 110:

*Paragraph 7.1.*, correct "paragraphs 8.12. to 8.21." to read "paragraphs 8.12. to **8.22.**".

*Annex 4A, paragraph 4.2.4.*, correct "of Class 1 and Class 2" to read "**of Class 2**".

*Annex 4H, paragraph 2.2.*, correct "than 5 seconds" to read "**than 2 seconds**".

*Annex 4J*

*Paragraph 2.2.*, shall be deleted.

*Paragraph 3.1.6.*, correct "shall be not be" to read "shall not be".

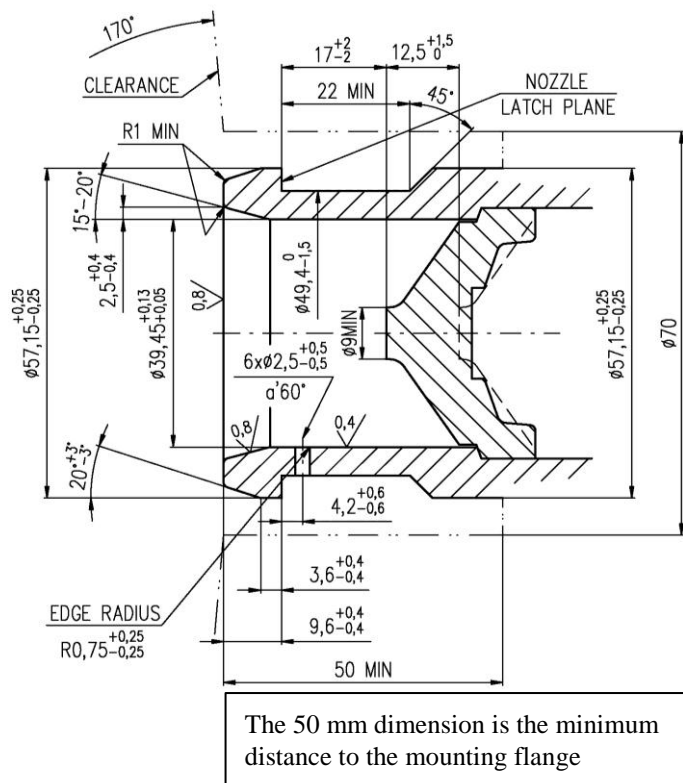
*Insert new paragraphs 4. and 4.1.*, to read:

**4. LNG filling receptacle dimensions**

**4.1. Figure 1 shows the dimensions of the LNG filling receptacle.**

Figure 1

**Dimensions of the receptacle**



38. GRSG agreed to resume consideration at the next session of GRSG on the ISO reference on the basis of a revised proposal jointly prepared by the Netherlands and NGV Global, taking into account the comments received.

39. The expert from France presented GRSG-110-23 introducing new provisions for the use of natural gas refrigeration systems to vehicles propelled by natural gas (CNG or LNG). GRSG noted general support on the proposal and agreed to resume consideration of this subject at its next session in October 2016. For that purpose, the secretariat was requested to circulate GRSG-110-23 with an official symbol.

#### **XIV. Regulation No. 116 (Vehicle Alarm Systems) (agenda item 13)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/7  
Informal document GRSG-107-08

40. Recalling the purpose of ECE/TRANS/WP.29/GRSG/2015/7, the expert from OICA informed GRSG that there was no new information on this subject. He suggested resuming consideration of this subject at the next session of GRSG and volunteered to prepare a revised document. GRSG endorsed that suggestion and agreed to keep document ECE/TRANS/WP.29/GRSG/2015/7 on the agenda as a reference document.

41. GRSG reconsidered GRSG-107-08 on the possible use of innovative system which enable opening of a vehicle via smartphone and on the question if a silent alarm to a security service via the internet might be subject to type approved system. The expert from OICA clarified that experts should differentiate between immobilizers and door locking systems. Following the discussion, GRSG endorsed the position of Germany that, according to the current definition of "key" in the provisions of UN Regulation No. 116, such systems could not yet be type approved. It was agreed that, in the case of evidence of the need to allow the use of such innovative systems for the purpose of activation or deactivation of immobilizers and door locking systems on vehicles, UN Regulation No. 116 would have to be amended first.

#### **XV. Regulation No. 118 (Burning behaviour of materials) (agenda item 14)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2016/3  
Informal document GRSG-110-02

42. Recalling the discussion on this subject at the previous GRSG session, the expert from Germany introduced ECE/TRANS/WP.29/GRSG/2016/3 proposing updated test requirements for electric cables sleeves and cable conduits. The expert from Finland suggested amending also the test provisions of Annex 8 on the test apparatus and the sample dimensions (GRSG-110-02).

43. Following the discussion, GRSG could not give full consent to the proposals and agreed to have a final review of the proposals at the next session of GRSG. Thus, the secretariat was requested to keep both documents on the agenda unless a revised proposal would be submitted.

## **XVI. Regulation No. 121 (Identification of controls, tell-tales and indicators) (agenda item 15)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/24  
Informal documents GRSG-110-04, GRSG-110-06 and GRSG-110-14

44. The expert from the Russian Federation recalled that the purpose of documents ECE/TRANS/WP.29/GRSG/2015/24 and GRSG-110-14 was to insert into UN Regulation No. 121 a new symbol for the emergency call control and tell-tale. The proposal received the full support of GRSG. However, it was agreed to submit it in parallel with the new draft Regulation on AECS (para. 47 below). Thus, GRSG preferred to keep the document on the agenda and requested the secretariat to circulate GRSG-110-14 with an official symbol.

45. GRSG noted the outcome of the recent session of GRE (GRSG-110-04) and the request to align UN Regulation No. 121. In this respect, the expert from Italy presented GRSG-110-06 aimed at clarifying the provisions of UN Regulation No. 121 with respect to the indication of the failure of a light source.

46. GRSG adopted the proposal as reproduced in Annex IV to this report and requested the secretariat to submit it to WP.29 and AC.1 for consideration at their November 2016 sessions, as draft Supplement 9 to the original version of UN Regulation No. 121 and as draft Supplement 1 to the 01 series of amendments to UN Regulation No. 121.

## **XVII. Accident Emergency Call Systems (AECS) (agenda item 16)**

*Documentation:* Informal documents GRSG-110-15 and GRSG-110-22

47. The expert from the Russian Federation, chairing the IWG on AECS, reported on the progress of work made by the group (GRSG-110-22). He drew the attention of GRSG to the controversial discussion of the experts on the performance requirements in the case of testing the resistance of accident emergency call devices to mechanical impact (pulse test). He presented the new draft UN Regulation on AECS (GRSG-110-15) and stated that this proposal was not yet the final version. He informed GRSG about the group's decision to go forward in a two-step approach and announced the intention of the IWG to finalize the basic proposal by mid-July 2016 for submission to and adoption by GRSG at its next session in October 2016 on the basis of an official document.

48. GRSG welcomed the proposal submitted by the IWG. The expert from EC informed GRSG that the EU legislation on emergency call systems (eCall) had been based on an acceleration/declaration of 65g. The expert from the Netherlands underlined the importance of AECS as a vehicle safety feature and the need to ensure their functionality in case of severe crashes. Thus, he expressed his preference to align the performance requirements of draft UN Regulation on AECS with those of the EU regulation. The experts from Japan and the Russian Federation raised their concern about the considerable costs of test equipment performing such acceleration/declaration of 65g. They were of the opinion that GRSG should take into account the economic burden for technical services. As a compromise solution, the expert from OICA suggested going forward in a two-step approach and adopting the new UN Regulation with the 60g value and subsequently to adopt the more stringent performance value of 65g as new series of amendments to the Regulation. The expert from CLEPA endorsed that position.

49. As GRSG could not find an agreement on this subject, the Chair of GRSG invited all experts to check on their national level the feasibility and durability of the 65g pulse test equipment and to send their comments including justifications on GRSG-110-15 at the latest by the end of June 2016 to the Secretary/Chair of the IWG. He also invited the

experts from the EC, Japan and the Russian Federation to find compromise agreement on the performance value for the pulse test considering the real benefit in life savings between the two pulses. GRSG endorsed that suggestion and agreed to resume discussion at the forthcoming session of GRSG on the basis of an official document.

## **XVIII. International Whole Vehicle Type Approval (IWVTA) (agenda item 17)**

*Documentation:* Informal documents WP.29-168-12 and GRSG-110-24

50. The expert from OICA, in his capacity of GRSG Ambassador to the IWG on IWVTA, informed GRSG about the progress made during the recent meetings of the IWGs (WP.29-168-12). As an outcome of the taskforce set up by GRSG at the previous session, he introduced GRSG-110-24 proposing several solutions to clarify the scope of UN Regulation No. 116. GRSG welcomed the document and noted a number of comments.

51. Following the discussion, GRSG agreed to follow the idea of having in future three separate UN Regulations on (i) anti-theft devices, (ii) alarm systems and (iii) immobilizers. GRSG agreed to resume consideration of this subject at its next session in October 2016 on the basis of concrete proposals and requested the secretariat to keep GRSG-110-24 on the agenda as a reference document.

## **XIX. Consolidated Resolution on the Construction of Vehicles (R.E.3) (agenda item 18)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2015/30

52. Recalling the purpose of ECE/TRANS/WP.29/GRSG/2015/30, the expert from IMMA announced his intention to submit, for consideration at the forthcoming GRSG session, a revised proposal on a definition of "twinned wheels", taking into account the comments received by the members of his organization.

53. GRSG welcomed the information and agreed to resume consideration of this subject at its next session in October 2016 on the basis of an updated official document by IMMA.

## **XX. Event data recorder (agenda item 19)**

54. Recalling the discussion on this subject at the previous GRSG session, the expert from UK reported that the IWG on Intelligent Transport Systems (ITS) and specifically its subgroup on Automated Driving (ITS/AD) had not yet discussed in detail the need to develop a new Regulation on the optional installation on vehicles of Event Data Recorder (EDR) taking into account technical parameters to be stored as well as the access and security of the data. The expert from Germany informed GRSG that the GRRF IWG on Automatically Commanded Steering Function (ACSF) had a preliminary discussion on the need of installation on automated vehicle of the so-called Data Storage System for ACSF (DSSA). The expert from OICA added that ACSF was currently considering the type of data necessary to be recorded and/or stored. He recommended distinguishing the data collected in the existing "regular" EDR, the data collected and sent out for AECS and those to be collected in the framework of ACSF.

55. GRSG reiterated its position to seek the advice of WP.29 on how to go forward with the coordination of the activities on data recording and data protection within the Working Parties subsidiary to WP.29 and their IWGs involved in automated driving, steering

functions and emergency call systems. The Chair of GRSG announced his intention to seek the advice of WP.29 on this subject at the June 2016 session.

56. The expert from UK offered his commitment to prepare for the next GRSG session a proposal on a possible way forward, taking into account the advice of WP.29. GRSG welcomed that offer and agreed to resume consideration of this subject at its next session.

## **XXI. Global Technical Regulation No. 6 (Safety glazing) (agenda item 20)**

57. The expert from the Republic of Korea, chairing the IWG on Panoramic Sunroof Glazing (PSG), reported on the outcome of the fourth meeting held in Geneva prior to the GRSG session on 25 April 2016. He added that the IWG had decided to stop its research activities and had considered a first proposal for the limitation of ceramic printed areas. He announced the intention of the IWG to convene again in Gilching (Germany) on 28 June 2016 to finalize the proposal for amendments to the UN regulations on safety glazing.

58. GRSG welcomed the good progress of work done by the IWG and agreed to resume consideration of this subject at the next GRSG session on the basis of a concrete proposal for amendments to be submitted by the IWG.

## **XXII. Amendments to regulations related to the 3D H-point machine (agenda item 21)**

59. The expert from Germany informed GRSG about outcome of the recent negotiations with the Society of Automotive Engineers (SAE) to obtain detailed drawings and technical specifications referred to in UN regulations. He added that he had already reported to WP.29 at the November 2015 session (see report ECE/TRANS/WP.29/1118, para. 42). GRSG welcomed the information and agreed to remove this item from the agenda.

## **XXIII. New regulation on Advanced Driver Assist Systems (agenda item 22)**

*Documentation:* Informal documents GRSG-109-19, GRSG-110-18-Rev.1 and GRSG-110-19

60. The expert from Israel gave a presentation (GRSG-110-19) on the need and global support to develop new technical provisions for blind spot detection and warning systems as well as the installation of such collision avoidance systems on heavy duty vehicles. Referring to GRSG-109-19 presented at the previous session, the expert from Germany introduced GRSG-110-18-Rev.1 on the current status of development on test procedures for a new draft regulation on Advanced Driver Assist Systems (ADAS) to avoid such blind spot accidents through a driver information and warning system. He reported on the results of several test scenarios of a heavy goods vehicle with a proposed test dummy. He concluded that further investigations were still in progress. GRSG welcomed the presentations and noted a number of comments.

61. Following the discussion, GRSG decided to go forward in a two-step approach: (i) to develop new requirements for driver warning systems and (ii) to investigate subsequently the possibility to develop further requirements for automatic braking systems. GRSG agreed to resume consideration of this subject at its next session on the basis of first draft of the new UN Regulation on ADAS expected to be submitted by Germany.

## **XXIV. Other business (agenda item 23)**

### **A. Performance of software based systems subjected to UN Regulations**

*Documentation:* Informal document WP.29-168-15

62. Referring to the decision of WP.29 at its March 2016 session (ECE/TRANS/WP.29/1120, para. 38), the Secretary of GRRF reported on a discussion that took place at GRRF in the context of IWVTA (WP.29-168-15) and on the issue of the performance of automotive systems (e.g. Tyre Pressure Monitoring Systems) in conditions other than those tested according to the regulated test procedures. He added that some safety systems, especially those relying on software, could be designed to only work in limited conditions corresponding to those tested rather than in all the relevant driving conditions.

63. GRSG noted the information and agreed on the need to discuss in the Working Parties subsidiary to the World Forum the possible risks of such systems. However, GRSG was of the opinion that type approval authorities should rely on the test provisions of the UN Regulations in force and should not perform a "fishing expedition" during the type approval procedure.

### **B. Notice of proposed rulemaking on safety of buses and coaches**

64. The secretariat informed GRSG about the notice of proposed rulemaking in the United States of America on the safety of buses and coaches initiated the National Highway Traffic Safety Administration.

65. GRSG welcomed the information and noted that more detailed information was available at: [www.nhtsa.gov/About+NHTSA/Press+Releases/nhtsa-nprm-additional-motorcoach-safety-04252016](http://www.nhtsa.gov/About+NHTSA/Press+Releases/nhtsa-nprm-additional-motorcoach-safety-04252016).

### **C. Tributes to Messrs. Preusser and Ayrat**

66. Learning that Dr. Klaus Preusser (Germany) was retiring, GRSG thanked him for his considerable contributions over the last decades to the activities of GRSG and especially his dedication, since 2011, as Chair of the GRSG IWG on Plastic Glazing.

67. GRSG noted that Mr. Louis-Sylvain Ayrat (CLEPA) also decided to retire and no longer attend the sessions. GRSG acknowledged his continued support during all the years of participation in the sessions. GRSG recognized their commitments with a long applause and wished both of them a long and happy retirement.

## **XXV. Provisional agenda for the 111<sup>th</sup> session**

68. The following provisional agenda was adopted for the 111<sup>th</sup> session of GRSG, scheduled to be held in Geneva from 11 (starting at 9.30 a.m.) to 14 October 2016 (concluding at 12.30 p.m.) 2016<sup>1</sup>:

1. Adoption of the agenda.
2. Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles).
3. Regulation No. 39 (Speedometer/odometer).
4. Regulation No. 43 (Safety glazing).
5. Regulation No. 46 (Devices for indirect vision).
6. Regulation No. 66 (Strength of superstructure (buses)).
7. Regulation No. 67 (LPG vehicles).
8. Regulation No. 73 (Lateral protection devices).
9. Regulation No. 110 (CNG and LNG vehicles).
10. Regulation No. 116 (Vehicle Alarm Systems).
11. Regulation No. 118 (Burning behaviour of materials).
12. Regulation No. 121 (Identification of controls, tell-tales and indicators).
13. Accident Emergency Call Systems (AECS).
14. International Whole Vehicle Type Approval (IWVTA).
15. Consolidated Resolution on the Construction of Vehicles (R.E.3).
16. In-vehicle Electronic Data Storage Systems.
17. Global Technical Regulation No. 6 (Safety glazing).
18. New regulation on Advanced Driver Assist Systems (ADAS).
19. Election of officers.
20. Other business.

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<sup>1</sup> GRSG noted that the deadline for submission of official documents to the UNECE secretariat was 15 July 2016, twelve weeks prior to the session.



## Annex I

**List of informal documents considered during the session****List of informal documents (GRSG-110-...) distributed during the session (English only)**

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(GRSG Chair) Running order of the 110 <sup>th</sup> session of GRSG (26 - 29 April 2016)	(f)
2	(Finland) Proposal for Supplement 3 to the 02 series of amendments and Supplement 1 to the 03 series of amendments to Regulation No. 118 (Burning behaviour)	(d)
3	(Romania/CLCCR/OICA) Proposal for amendments to UN Regulation No. 107 (Buses and coaches)	(b)
4	(Secretariat) GRE Comments to UN Regulations Nos. 107 (Buses and coaches) and 121 (Identification of controls, tell-tales and indicators)	(f)
5	(ISO) Proposal for amendments to Regulation No. 110 (Specific components for CNG)	(e)
6	(France/Germany/Italy) UN Regulation No. 121 (Identification of controls, tell-tales and indicators) - Draft proposal for Supplement 1 to the 01 series of amendments	(a)
7	(Netherlands) Draft Corrigendum to ECE/TRANS/WP.29/2106/13 (UN Regulation No. 105 - ADR vehicles)	(b)
8-Rev.1	(OICA) Applicability of UN Regulations to trolley buses	(f)
9	(OICA) Proposal for amendments to Series 04 to 07 of Regulation No. 107 (M2 and M3 vehicles)	(b)
10	(Japan) Study of pedestrian's fatal accidents (vs. motor vehicles at low speed) in Japan	(f)
11	(Japan) Requirement for the view of the vehicle's surroundings and rear	(f)
12	(Japan) Proposal for amendments to Regulation No. 46 (Devices for indirect vision)	(d)
13	(AEGPL) Proposal for amendments to the 01 series of amendments to Regulation No. 67 (Equipment for Liquefied Petroleum Gas)	(c)
14	(AECS) Proposal to amend ECE/TRANS/WP.29/GRSG/2015/24 (UN Regulation No. 121)	(c)
15	(AECS) Regulation No. XXX on uniform provisions concerning the approval of Accident Emergency Call Devices (AECD), vehicles with regard to the installation of an AECD of an approved type and vehicles with regard to their AECS	(e)
16	(UK) Proposal for the 02 series of amendments to Regulation No. 66 (Strength of superstructure (buses))	(d)
17	(FIA) Protection against mileage fraud - Current status in ITS-AD	(f)
18-Rev.1	(Germany) Draft Regulation on driver assist systems to avoid blind spot accidents	(f)
19	(Israel) Blind Spot Detection and Warning	(f)
20-Rev.1	(CLCCR) Proposal for amendments to Regulation No. 73 (Lateral protection devices)	(d)
21	(Italy) Proposal for supplements to the 05, 06 and 07 series of amendments to UN Regulation No. 107 (Buses and coaches)	(b)
22	(AECS Chair) Progress report of GRSG informal group on Accident Emergency Call Systems (AECS)	(f)
23	(France) Proposal for amendments to Regulation No. 110 (CNG and LNG vehicles)	(c)
24	(IWVTA) Proposal for amendments to Regulation No. 116 (Protection of vehicles against unauthorized use)	(d)
25	(The Netherlands) Proposal for amendments to Regulation No. 67 (LPG vehicles)	(e)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
26	(The Netherlands) Proposal for amendments to Regulation No. 110 (CNG and LNG vehicles)	(b)
27	(Germany) Proposal for amendments to Regulation No. 110	(b)
28	(Germany) Proposal for a supplement to the 04 series of amendments to Regulation No. 46 (Devices for indirect vision)	(b)

**List of informal documents distributed and linked to a previous session of GRSG or WP.29 (English only)**

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
GRSG-104-39-Rev.3	(IWVTA Ambassador) Priority of Discussion on Technical Requirements for IWVTA and Draft Report to IWVTA Informal Meeting	(f)
GRSG-107-08	(Germany) UN Regulation No. 116 and innovative vehicle alarm systems / anti-theft systems	(f)
GRSG-109-13	(EC) Proposal for amendments to the 01 series of amendments to Regulation No. 39 (Speedometer)	(e)
GRSG-109-19	(Germany) Information on requirements for driver assistance systems for heavy goods vehicles addressing blind spot accidents	(f)
WP.29-168-12	(IWVTA) Report to 168th WP.29 session from the 20th IWVTA Informal Group meeting	(f)
WP.29-168-15	(Secretariat) The performance of automotive systems in conditions other than those tested in the framework of type-approval or self-certification	(f)

*Notes:*

- (a) Adopted/endorsed with no change for consideration at WP.29.
- (b) Adopted/endorsed with changes for consideration at WP.29.
- (c) Resume consideration on the basis of an official document.
- (d) Kept as reference document/continue consideration.
- (e) Revised proposal for the next session.
- (f) Consideration completed or to be superseded.

## Annexe II

**Draft Supplements to the 04, 05, 06 and 07 series of amendments to Regulation No. 107 (para. 5) (superseding ECE/TRANS/WP.29/GRSG/2015/21)**

## Annex 3

Paragraph 7.7.5.1., amend to read:

"7.7.5.1. ....

In vehicles of Classes II, III and B, the gauging device according to Annex 4, Figure 6 may come into contact with any monitor or display device mounted from the ceiling above the gangway. **The maximum force necessary to move any such monitor or display device out of the way, in both directions, shall not exceed 35 Newton. This maximum force shall be applied normal to the middle of the lower edge of the monitor or display device in both directions in turn until the monitor or display device has reached a position which allows clear passage of the gauging device.** After being moved out of the way, the monitor or display device shall **maintain its position and not automatically redeploy.**

**If a vehicle of Class I, II or A is fitted with a barrier, the gauging device according to Annex 4, Figure 6, may come into contact with the barrier provided that the maximum force necessary to move such barrier out of the way does not exceed 50 Newton measured at the point of contact between the gauging device according to Annex 4, Figure 6 and the barrier and applied perpendicular to the barrier.**

**The maximum force shall apply to both directions of movement of the gauging device.**

**If the vehicle is equipped with a lift adjacent to the barrier, the barrier may be temporarily blocked during the operation of the lift."**

Paragraphs 7.7.8.4. to 7.7.8.4.2., amend to read:

"7.7.8.4. Seat spacing (see Annex 4, Figures 12A and 12B)

7.7.8.4.1. In the case of seats facing in the same direction, the distance between the front of a seat squab and the back of the squab of the seat preceding it (dimension H), shall, when measured horizontally, **parallel to the longitudinal plane of the vehicle** and at all heights above the floor between the level of the top surface of the seat cushion and a point 620 mm above the floor, not be less than:

<i>H</i>	
Classes I, A and B	650 mm
Classes II and III	680 mm

7.7.8.4.2. All measurements shall be taken, with the seat cushion and squab uncompressed **using the testing gauge shown in Annex 4, Figure 12B."**

Annex 3, paragraph 7.7.8.5.3., amend to read:

"7.7.8.5.3. The minimum number of priority seats complying with the requirements of Annex 8, paragraph 3.2. shall be four in Class I, two in Class II and one in Class A. **In the case of vehicles of Class III or Class B subject to the requirements of Annex 8,**

**the minimum number of priority seats shall be two in Class III and one in Class B.**

A seat that folds out of the way when not in use shall not be designated as a priority seat."

*Annex 4, Figure 12, amend to read:*

"Figure 12A

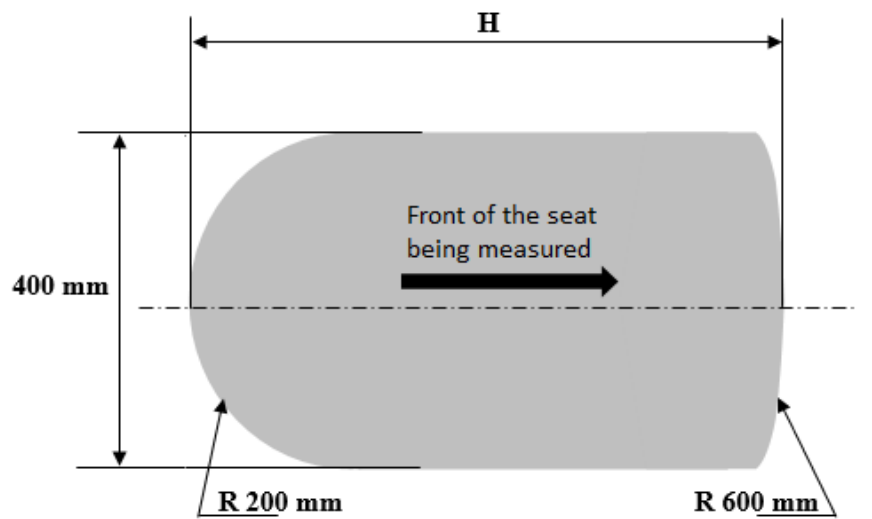
Seat spacing .....

.....

**Figure 12B**

**Testing gauge for H dimension (see Annex 3, paragraph 7.7.8.4.2.)**

**Thickness of the gauge: 5 mm maximum**



## Annexe III

### Draft 06 series of amendments to Regulation No. 105 (para. 30) (superseding ECE/TRANS/WP.29/GRSG/2016/13)

Paragraph 3.2.2., amend to read:

"3.2.2. Vehicle designation, according to paragraph 9.1.1.2. of the ADR (EX/II, EX/III, AT, FL, MEMU);"

Paragraph 5.1., the table, amend to read:

"

Technical specifications		Vehicle designation (according to chapter 9.1 of Annex b to ADR)				
		EX/II	EX/III	AT	FL	
5.1.1.	Electrical equipment					
5.1.1.1.	<b>General provisions</b>	X	X	X	X	
5.1.1.2.1.	<b>Cables</b>	X	X	X	X	
5.1.1.2.2.	<b>Additional protection</b>	X	X	X	X	
5.1.1.3.	<b>Fuses and circuit breakers</b>	X	X	X	X	
5.1.1.4.	Batteries	X	X	X	X	
5.1.1.5.	<b>Lighting</b>	X	X	X	X	
5.1.1.6.	Electrical connections	X	X	X	X	
5.1.1.7.	<b>Voltage</b>	X	X			
5.1.1.8.	<b>Battery master switch</b>		X		X	
5.1.1.9.	<b>Permanently energized circuits</b>					
5.1.1.9.1.					X	
5.1.1.9.2.			X			
5.1.2.	<b>Braking equipment</b>					
5.1.2.1.		X	X	X	X	
5.1.3.	Prevention of fire risks					
5.1.3.2.	Fuel tanks	X	X		X	
5.1.3.3.	Engine	X	X		X	
5.1.3.4.	Exhaust system	X	X		X	
5.1.3.5.	Vehicle endurance braking	X	X	X	X	
5.1.3.6.	Combustion heaters					

Technical specifications		Vehicle designation (according to chapter 9.1 of Annex b to ADR)				
		EX/II	EX/III	AT	FL	
5.1.3.6.1.		X	X	X	X	
5.1.4.	Speed limitation device	X	X	X	X	
5.1.5.	Coupling devices of motor vehicles and trailers	X	X	X	X	
5.1.6.	Prevention of other risks caused by fuels			X	X	

Paragraph 5.1.1.1., amend to read:

"5.1.1.1. General provisions

**The installation shall be so designed, constructed and protected that it cannot provoke any unintended ignition or short-circuit under normal conditions of use of vehicles.**

**The electrical installation as a whole shall meet the provisions of paragraphs 5.1.1.2. to 5.1.1.9. in accordance with the table of paragraph 5.1."**

Insert new paragraphs 5.1.1.2.1. and 5.1.1.2.2., to read:

"5.1.1.2.1. Cables

**No cable in an electrical circuit shall carry a current in excess of that for which the cable is designed. Conductors shall be adequately insulated.**

**The cables shall be suitable for the conditions in the area of the vehicle, such as temperature range and fluid compatibility conditions as given in ISO 16750-4:2010 and ISO 16750-5:2010, they are intended to be used.**

**The cables shall be in conformity with standard ISO 6722-1:2011 including its Corr. 01:2012 or ISO 6722-2:2013.**

**Cables shall be securely fastened and positioned to be protected against mechanical and thermal stresses.**

5.1.1.2.2. Additional Protection

**Cables located to the rear of the driver's cab and on trailers shall be additionally protected to minimize any unintended ignition or short-circuit in the event of an impact or deformation.**

**The additional protection shall be suitable for the conditions during normal use of the vehicle.**

**The additional protection is complied with if multicore cables in conformity with ISO 14572:2011 are used or one of the examples in Figures 1 to 4 below or another configuration that offers equally effective protection is used.**

**Cables of wheel speed sensors do not need additional protection.**

**EX/II vehicles being one stage built panel vans where the wiring behind the driver's cab is protected by the body are deemed to comply with this requirement.**

Figure 1

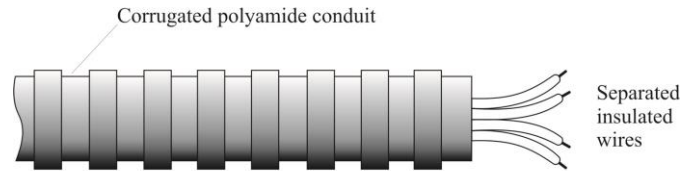


Figure 2

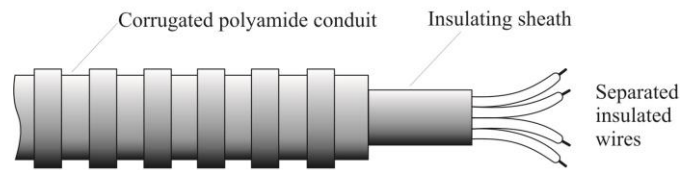


Figure 3

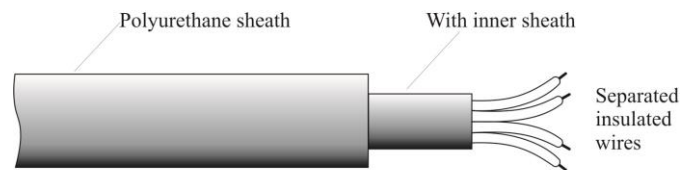
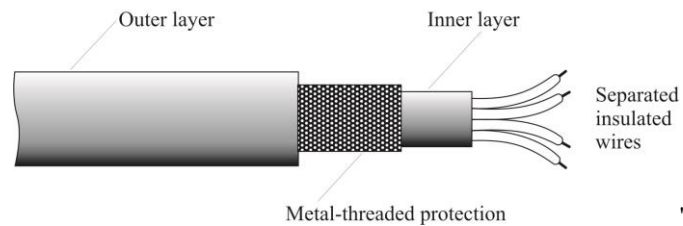


Figure 4



Paragraph 5.1.1.2.1. (former), renumber as paragraph 5.1.1.3. and amend to read:

**"5.1.1.3. Fuses and circuit breakers**

All circuits shall be protected by fuses or automatic circuit breakers, except for the following:

- (a) From the **starter** battery to the cold start system.
- (b) From the **starter** battery to the alternator.
- (c) From the alternator to the fuse or circuit breaker box.

- (d) From the **starter** battery to the starter motor.
- (e) From the **starter** battery to the power control housing of the endurance braking system (**see paragraph 5.1.2.1.**), if this system is electrical or electromagnetic.
- (f) From the **starter** battery to the electrical lifting mechanism for lifting the bogie axle.

The above unprotected circuits shall be as short as possible."

*Paragraph 5.1.1.2.2. (former), shall be deleted.*

*Paragraph 5.1.1.4., amend to read:*

"5.1.1.4. Batteries

**Battery terminals shall be electrically insulated or the battery shall be covered by an insulating cover. Batteries which may develop ignitable gas and are not located under the engine bonnet, shall be fitted in a vented box."**

*Paragraphs 5.1.1.6.2. and 5.1.1.6.3. (former), renumber as paragraphs 5.1.1.5. and 5.1.1.6. and amend to read:*

"5.1.1.5. Lighting

**Light sources** with a screw cap shall not be used.

5.1.1.6. Electrical connections **between motor vehicles and trailers**

5.1.1.6.1. Electrical connections **shall be designed to prevent:**

- (a) **Ingress of moisture and dirt; the connected parts** shall have a protection degree of at least IP54 in accordance with IEC 60529;
- (b) Accidental disconnection; connectors shall **fulfil the requirements given in clause 5.6. of ISO 4091:2003.**

5.1.1.6.2. **Requirements of paragraph 5.1.1.6.1. are deemed to be met:**

- (a) **For connectors standardized for specific purposes accord to ISO 12098:2004<sup>5</sup>, ISO 7638:2003<sup>5</sup>, EN 15207:2014<sup>5</sup> or ISO 25981:2008<sup>5</sup>.**
- (b) **Where the electrical connections are part of an automatic coupling system (see Regulation No. 55).**

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<sup>5</sup> ISO 4009, referred to in this standard, need not be applied."

*Insert a new paragraph 5.1.1.6.3., to read:*

"5.1.1.6.3. **Electrical connections for other purposes concerning the proper functioning of the vehicles or their equipment may be used provided they comply with the requirements of paragraph 5.1.1.6.1."**

*Insert a new paragraph 5.1.1.7., to read:*

"5.1.1.7. Voltage

**The nominal voltage of the electrical system shall not exceed 25V A.C. or 60V D.C.**

**Higher voltages are allowed in galvanically isolated parts of the electrical system provided those parts are not located within a perimeter of at least 0.5 metres from the outside of the load compartment or tank.**



**Additionally systems working on a voltage higher than 1000V A.C. or 1500V D.C. shall be integrated in an enclosed housing.**

**If Xenon lights are used only those having integrated starters are allowed."**

*Paragraphs 5.1.1.3. to 5.1.1.3.2. (former), renumber as paragraphs 5.1.1.8. to 5.1.1.8.2. and amend to read:*

**5.1.1.8.** Battery master switch

**5.1.1.8.1.** A switch for breaking the electrical circuits shall be placed as close to the battery as practicable. If a single pole switch is used it shall be placed in the supply lead and not in the earth lead.

**5.1.1.8.2.** A control device to facilitate the disconnecting and the reconnecting functions of the switch shall be installed in the driver's cab. It shall be readily accessible to the driver and distinctively marked. It shall be protected against inadvertent operation by either adding a protective cover, by using a dual movement control device, or by other suitable means. Additional control devices may be installed provided they are distinctively marked and protected against inadvertent operation. If the control device(s) are electrically operated, the circuits of the control device(s) are subject to the requirements of paragraph **5.1.1.9.**"

*Insert a new paragraph 5.1.1.8.3., to read:*

**5.1.1.8.3. The switch shall break the circuits within 10 seconds after activation of the control device."**

*Former paragraphs 5.1.1.3.3. and 5.1.1.3.4., renumber as paragraphs 5.1.1.8.4. and 5.1.1.8.5. and amend to read:*

**5.1.1.8.4.** The switch shall have a casing with protection degree IP65 in accordance with IEC Standard 60529.

**5.1.1.8.5.** The cable connections on the battery master switch shall have a protection degree IP54 **in accordance with IEC Standard 60529.** However, this does not apply if these connections are contained in a housing which may be the battery box. In this case it is sufficient to insulate the connections against short circuits, for example with a rubber cap."

*Former paragraphs 5.1.1.5. to 5.1.1.5.2., renumber as paragraphs 5.1.1.9. to 5.1.1.9.2. and amend to read:*

**5.1.1.9.** Permanently energized circuits

**5.1.1.9.1. (a)** Those parts of the electrical installation, including the leads which shall remain energized when the battery master switch is open, shall be suitable for use in hazardous areas. Such equipment shall meet the **general** requirements of IEC 60079<sup>4</sup>, parts 0 and 14 and the additional requirements applicable from IEC 60079, parts 1, 2, 5, 6, 7, 11, 15 or 18.

**(b)** For the application of IEC 60079, part 14, the following classification shall be used:

Permanently energized electrical equipment including the leads ~~that~~ **which** are not subject to paragraphs 5.1.1.4. **and 5.1.1.8.** shall meet the requirements for **Zone 1** for electrical equipment in general or meet the requirements for **Zone 2** for electrical equipment situated in

the driver's cab. The requirements for explosion group IIC, temperature class T6, shall be met.

**However, for permanently energized electrical equipment installed in an environment where the temperature caused by non-electrical equipment situated in that environment exceeds the T6 temperature limit, the temperature classification of the permanently energized electrical equipment shall be at least that of the T4 temperature class.**

- (c) The supply leads for permanently energized equipment shall either comply with the provisions of IEC 60079, part 7 ("Increased safety") and be protected by a fuse or automatic circuit breaker placed as close to the source of power as practicable or, in the case of "intrinsically safe equipment", they shall be protected by a safety barrier placed as close to the source of power as practicable.

**5.1.1.9.2.** Bypass connections to the battery master switch for electrical equipment which must remain energized when the battery master switch is open shall be protected against overheating by suitable means, such as a fuse, a circuit breaker or a safety barrier (current limiter).

<sup>4</sup> The requirements of IEC 60079 part 14 do not take precedence over the requirements of this Regulation."

*Paragraphs 5.1.1.6. and 5.1.1.6.1., shall be deleted.*

*Paragraphs 5.1.3. to 5.1.3.1. (former), renumber as paragraphs 5.1.2. to 5.1.2.1. and amend to read:*

**"5.1.2.** Braking equipment

**5.1.2.1.** **EX/II, EX/III, AT, FL and MEMU vehicles shall fulfil all relevant requirements of Regulation No. 13, including those of Annex 5."**

*Paragraphs 5.1.2. and 5.1.2.1. (former), renumber as paragraphs 5.1.3. and 5.1.3.1.*

*Paragraph 5.1.2.2. (former), shall be deleted.*

*Paragraphs 5.1.2.3. and 5.1.2.3.1. (former), renumber as paragraph 5.1.3.2. and amend to read:*

**"5.1.3.2.** Fuel tanks **and cylinders**

The fuel tanks **and cylinders** supplying the engine of the vehicle shall meet the following requirements:

- (a) In the event of any leakage **under normal conditions of carriage**, the **liquid fuel or the liquid phase of a gaseous fuel**, shall drain to the ground **and not come** into contact with **the load or** hot parts of the vehicle.
- (b) **Fuel tanks for liquid fuels shall meet the requirements of Regulation No. 34; fuel tanks containing petrol shall be equipped with an effective flame trap at the filler opening or with a closure enabling the opening to be kept hermetically sealed. Fuel tanks and cylinders for LNG and for CNG respectively shall meet the relevant requirements of Regulation No. 110. Fuel tanks for LPG shall meet the relevant requirements of Regulation No. 67.**

- (c) **The discharge opening(s) of pressure relief devices and/or pressure relief valves of fuel tanks containing gaseous fuels shall be directed away from air intakes, fuel tanks, the load or hot parts of the vehicle and shall not impinge on enclosed areas, other vehicles, exterior-mounted systems with air intake (i.e. air conditioning systems), engine intakes, or engine exhaust. Pipes of the fuel system shall not be fixed on the shell containing the load."**

*Paragraph 5.1.2.3.2. (former), shall be deleted.*

*Paragraph 5.1.2.4. (former), renumber as paragraph 5.1.3.3. and amend to read:*

**"5.1.3.3. Engine**

The engine propelling the vehicle shall be so equipped and situated to avoid any danger to the load through heating or ignition. **The use of CNG or LNG as fuel shall be permitted only if the specific components for CNG and LNG are approved according to Regulation No. 110 and meet the provisions of paragraph 5.1.1. The installation on the vehicle shall meet the technical requirements of paragraph 5.1.1. and Regulation No. 110. The use of LPG as fuel shall be permitted only if the specific components for LPG are approved according to Regulation No. 67 and meet the provisions of paragraph 5.1.1. The installation on the vehicle shall meet the technical requirements of paragraph 5.1.1. and Regulation No. 67.** In the case of EX/II, and EX/III vehicles, the engine shall be of compression-ignition construction using only liquid fuels with a flashpoint above 55 °C. **Gases shall not be used."**

*Paragraphs 5.1.2.5. to 5.1.2.7.1. (former), renumber as paragraphs 5.1.3.4. to 5.1.3.6.1.*

*Paragraph 5.1.5., amend to read:*

**"5.1.5. Coupling devices of motor vehicles and trailers**

Coupling devices **of motor vehicles and** trailers shall comply with the technical requirements of Regulation No. 55."

*Insert new paragraphs 5.1.6. and 5.1.6.1., to read:*

**"5.1.6. Prevention of other risks caused by fuels**

**5.1.6.1. Fuel systems for engines fuelled by LNG shall be so equipped and situated to avoid any danger to the load due to the gas being refrigerated."**

*Paragraphs 10. to 10.4., amend to read:*

**"10. Transitional provisions**

- 10.1. As from the official date of entry into force of the **06** series of amendments, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by the **06** series of amendments.
- 10.2. As from 1 April **2018**, Contracting Parties applying this Regulation shall grant ECE approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the **06** series of amendments.
- 10.3. Contracting Parties applying this Regulation shall continue to grant approvals and extensions of such approvals to those types of vehicle which comply with

the requirements of this Regulation, as amended by the preceding series of amendments until 31 March 2018.

- 10.4. No Contracting Party applying this Regulation shall refuse national or regional type approval of a vehicle type approved to the 06 series of amendments to this Regulation."

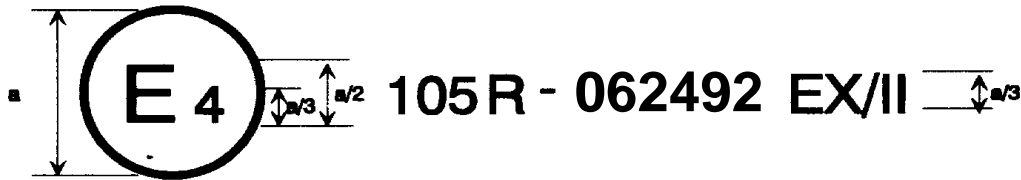
Annex 1, item 4, amend to read:

"4. Vehicle designation (EX/II, EX/III, FL, AT, MEMU):....."

Annex 2, amend to read:

### "Arrangements of approval marks

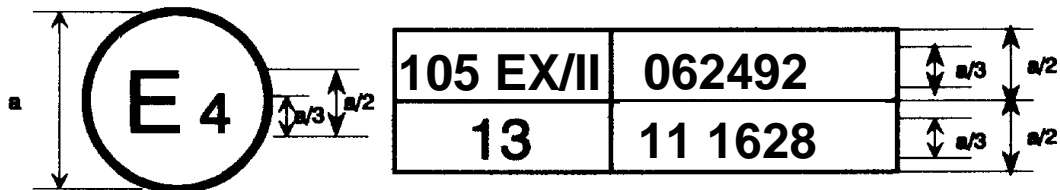
Model A  
(see paragraph 4.4. of this Regulation)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned, intended for the transport of dangerous goods, has been approved in the Netherlands (E 4), pursuant to Regulation No. 105, under the approval number 062492 and designated EX/II (according to paragraph 9.1.1.2. of Annex B to the ADR). The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 105 as amended by the 06 series of amendments.

Model B  
(see paragraph 4.5. of this Regulation)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. 105 and 13<sup>1</sup>. The first two digits of the approval numbers indicate that, at the dates when respective approvals were granted, Regulation No. 105, as amended by the 06 series of amendments, while Regulation No. 13 already included the 11 series of amendments.



<sup>1</sup> The second Regulation number is given merely as an example."

## Annex IV

**Draft Supplement 9 to Regulation No. 121 and draft Supplement 1 to the 01 series of amendments to Regulation No. 121 (para. 46)**

In Table 1, lines Nos. 2. and 19., add a reference to note <sup>18</sup>, to read:

"Table 1  
Symbols, their illumination and colours.

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	Item	Symbol <sup>2</sup>	Function	Illumination	Colour
...	...	...	...	...	...
2.	Headlamp passing beams	 1, 6, 13, 18	Control	No	
			Tell-tale	Yes	Green
...	...	...	...	...	...
19.	Position, side marker, and/or end-outline marker lamps	 1, 6, 18	Control	No	
			Tell-tale <sup>12</sup>	Yes <sup>6</sup>	Green
...	...	...	...	...	...

....."

## Annex V

**GRSG informal groups**

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<i>Informal group</i>	<i>Chair</i>	<i>Secretary</i>
Accident Emergency Call Systems (AECS)	Mr. D. Zagarin (Russian Federation) Tel: +7 495 9949916 Fax: +7 495 9949940 e-mail: zagarin@autorc.ru	Mr. O. Fontaine (OICA) Tel: +33 1-43590013 Fax: +33 1-45638441 e-mail: ofontaine@oica.net
Panoramic Sunroof Glazing (PSG)	Mr. S. B. Eom (Republic of Korea) (co-chaired by Mr. R. Damm (Germany)) Tel: +82 31 3690217 Fax: +82 0502 384 5328 e-mail: sbeom@ts2020.kr	Mr. S. Müller von Kralik (CLEPA) Tel: +49 89 85794 1625 e-mail: Bianca.Reptr@webasto.com

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