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Report of the Working Party on General Safety Provisions on its 115th session

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I. Attendance

1. The Working Party on General Safety Provisions (GRSG) held its 115th session from 9 to 12 October 2018 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) (ECE/TRANS/WP.29/690/Rev.1): Belgium, Canada, China, Czechia, Finland, France, Germany, Hungary, India, Israel, Italy, Japan, Kuwait, Latvia, Netherlands, Norway, Poland, Republic of Korea, Russian Federation, Serbia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland (United Kingdom) and Viet Nam. An expert from the European Commission (EC) participated. Experts from non-governmental organizations participated: European Association of Automotive Suppliers (CLEPA), Natural Gas Vehicles Association Europe (NGVA Europe), International Association for Natural Gas Vehicles (NGV Global), International Motorcycle Manufacturers Association (IMMA), International Organization for Standardization (ISO), International Organization of Motor Vehicle Manufacturers (OICA) and Liquid Gas Europe (LG Europe). Upon the special invitation of the Chair, experts from the International Association of the Body and Trailer Building Industry (CLCCR) and World Bicycle Industry Association (WBIA) participated.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRSG/2018/10 and Add.1
Informal documents WP.29-175-25, GRSG-115-01 and GRSG-115-02

2. GRSG considered and adopted the agenda proposed for the 115th session.
3. GRSG also adopted the running order (GRSG-115-01) as proposed by the Chair. GRSG noted GRSG-115-02 on the main decisions and recommendations of the World Forum taken during its June 2018 session (ECE/TRANS/WP.29/1139 and Add.1). Upon the request by the Inland Transport Committee (ITC) to consider establishing a dedicated working party on vehicle automation, WP.29 had agreed to convert the Working Party on Brakes and Running Gear (GRRF) into the Working Party on Automated/Autonomous and Connected Vehicles (GRVA) and to reallocate certain tasks such as tyres to the Working Party on Noise (GRB) and coupling devices to GRSG (WP.29-175-25). GRVA would oversee the remaining topics from GRRF and encompass activities on vehicle automation. The coordination between the working parties (GRs) on the different vehicle automation activities would remain with WP.29. The WP.29 decision had taken effect immediately, but would have to be confirmed by ITC in February 2019.
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 VI.

III. Amendments to regulations on buses and coaches (agenda item 2)

A. UN Regulation No. 107 (M₂ and M₃ vehicles)

Documentation: Informal documents GRSG-114-05, GRSG-114-16, GRSG-115-04, GRSG-115-15, GRSG-115-26 and GRSG-115-41

5. The expert from Poland recalled the purpose of GRSG-114-05 on a possible error in Annex 11 of UN Regulation No. 107. The expert from OICA proposed to correct Annex 3 of several Supplements and series of amendments to the Regulation (GRSG-115-41). GRSG endorsed the amendments as reproduced below. The secretariat was requested to submit it to WP.29 and AC.1 as Corrigenda to Revisions 4 to 8 of UN Regulation No. 107 for consideration at their March 2019 sessions.

Annex 3, paragraphs 7.2.3.1.1. to 7.2.3.1.3., should be deleted.

6. Referring to ECE/TRANS/WP.29/GRSG/2007/33 tabled by Germany on a new draft UN Regulation on frontal protection of buses, the expert from Norway presented GRSG-115-04 reiterating the need to enhance the protection and integrity of the compartment of the driver and any crew member of buses and coaches in case of a frontal collision. The expert from the United Kingdom reported on the rarity of statistical data available in his country on such accidents. He preferred receiving first some more research on causality data. The expert from Finland echoed that position and questioned if this subject was not a matter of passive safety falling under the responsibility of the Working Party on Passive Safety (GRSP). The expert from Germany was of the opinion that there are already a number of active safety systems available today.

7. Finally, GRSG agreed on the need to collect some accidentology data on frontal collisions of buses and coaches resulting in risks for the driver and/or crew member. The GRSG Chair invited all governmental experts to investigate on their national/regional statistical data and to provide the results to GRSG for consideration at its April 2019 session. GRSG agreed to keep GRSG-115-04 on the agenda as a reference document.

8. GRSG considered in detail GRSG-115-15, tabled by the expert from OICA, that clarified the transitional provisions for the approval of vehicles which are not affected by the latest 08 series of amendments to UN Regulation No. 107. The expert from EC underlined the urgency for adopting this additional provision to give certainty to contracting parties and manufacturers. Finally, GRSG endorsed the proposal as reproduced below. The secretariat was requested to submit it to WP.29 and AC.1 as a draft Supplement 1 to the 08 series of amendments to UN Regulation No. 107 for consideration at their March 2019 sessions.

Insert a new paragraph 10.24., to read:

"10.24. Notwithstanding paragraphs 10.20. and 10.22., Contracting Parties applying this Regulation shall continue to accept type approvals granted to the 06 or 07 series of amendments to vehicles which are not affected by the 08 series of amendments."

9. The expert from Italy recalled the purpose of GRSG-114-16 and the discussion of GRSG at its previous session on new provisions for the possible approval of alternative equipment to improve the accessibility of people with reduced mobility, particularly on coaches. He introduced a revised proposal (GRSG-115-26) and underlined that the provisions for the installation of a lift were not aimed at replacing the current mandatory requirements on the vehicle accessibility for people with reduced mobility. The expert from the United Kingdom welcomed the proposal, but underlined that this alternative equipment was usually not part of the vehicle and could be considered as an after-market solution upon the choice of the coach operator. The expert from Finland stated that such a lift could not substitute a wheelchair ramp or platform. The experts from Germany and the Russian Federation endorsed that position and questioned if such a lift could even be type approved as a component or a separate part under UN Regulation No. 107. The expert from UK added that such devices needed the intervention of the driver and, in some cases, challenging manoeuvres by the disabled person. He also questioned the universality of the device for different angle of access (i.e. steeper steps). Taking into account multiple

possible technical solutions, a number of experts preferred that such alternative equipment not be part of the Regulation and, therefore not in the scope.

B. UN Regulation No. 118 (Burning behaviour of materials)

Documentation: Informal document GRSG-115-07

10. The expert from France, chairing the Informal Working Group (IWG) on the behaviour of the general construction of M₂ and M₃ vehicles in a fire event (BMFE), introduced GRSG-115-07 on the outcome of the recent meetings held in Berlin on 15 June 2018 and in Paris on 10 and 11 September 2018. He reported that IWG had identified mainly the need to strengthen the provisions of (a) UN Regulation No. 118 particularly on the toxicity and opacity of the smoke, its invasion and evacuation and (b) UN Regulation No. 107 on smoke extraction and fire detection systems, taking into account the safety instructions and functionalities of automatic opening of exits, luminous indicators and trajectories. GRSG welcomed the updated information by France on the progress of work and noted that the forthcoming meeting of IWG on BMFE was scheduled to be held in Madrid on 27 and 28 November 2018.

11. GRSG agreed to resume consideration of this subject at its next session.

IV. UN Regulation No. 26 (External projections of passenger cars) (agenda item 3)

Documentation: ECE/TRANS/WP.29/GRSG/2018/17
Informal documents GRSG-115-08, GRSG-115-16 and GRSG-115-32

12. Referring to ECE/TRANS/WP.29/GRSG/2018/17, the expert from France introduced GRSG-115-08 that clarifies the requirements on windscreen wipers with a simple generic drawing of the areas concerned. The expert from EC supported the proposal. The expert from CLEPA was of the opinion that the clarification by France imposed more stringent requirements particularly for the wiper holder and would require a justification for evolving costs (GRSG-115-32). The expert from OICA endorsed the position of CLEPA. He suggested inserting transitional provisions and adopting the proposal as a new series amendments to UN Regulation No. 26. The Chair invited the experts from France and OICA to submit, in due time, a revised proposal including transitional provisions, for consideration at the next GRSG session on the basis of an official document.

13. The expert from OICA presented GRSG-115-16 amending the provisions for rear edges of the bonnet as they can be considered as not dangerous due to their location on the vehicle. The expert from EC raised a study reservation. GRSG requested the secretariat to circulate GRSG-115-16 with an official symbol for consideration at its next session.

V. UN Regulation No. 35 (Foot controls) (agenda item 4)

Documentation: Informal document GRSG-115-17

14. The expert from OICA introduced GRSG-115-17 clarifying the measurement method for the lateral distances of the pedals to the nearest "wall" to the left. He added that the proposal should be introduced as a new series of amendments because the new provisions may result in some constraints for manufacturers. GRSG noted no objection and agreed to resume consideration at its next session on the basis of an official document.

VI. Amendments to safety glazing regulations (agenda item 5)

Documentation: Informal document GRSG-115-35

15. The expert from the Republic of Korea, Chair of IWG on Panoramic Sunroof Glazing (PSG), introduced GRSG-115-35 on the progress of the group during its tenth meeting on 8 October 2018. The IWG Secretary added that no further research and testing activities on ceramic printer areas of glazing material had started and that an amendment to the UN regulations was premature. He concluded that IWG had preferred to adopt, in the meantime, a recommendation on ceramic printer areas.

16. GRSG endorsed the proposal and agreed to resume consideration on this subject at its session in April 2019 on the basis of a draft recommendation.

A. UN Global Technical Regulation No. 6 (Safety glazing)

Documentation: ECE/TRANS/WP.29/2018/167
Informal documents WP.29-175-30 and GRSG-115-38

17. GRSG noted the submission by India of ECE/TRANS/WP.29/2018/167 requesting the authorization to develop an amendment to UN Global Technical Regulation (UN GTR) No. 6 on safety glazing for consideration by the Executive Committee of the 1998 Agreement (AC.3) at its November 2018 session.

18. As a follow-up of WP.29-175-30, the expert from India introduced GRSG-115-38 to align UN GTR No. 6 on the optional use of laminated-glass panes with improved mechanical properties especially those for the front, exterior, forward-facing glazing of the upper deck of a double-deck vehicle. GRSG welcomed the proposal and agreed to resume consideration at its next session in April 2019. The secretariat was requested to circulate GRSG-115-38 with an official symbol.

B. UN Regulation No. 43 (Safety glazing)

Documentation: Informal documents GRSG-115-09 and GRSG-115-27-Rev.1

19. The expert from France introduced GRSG-115-09 to clarify in Annex 3 the reference to the test requirements for abrasion and resistance to simulated weathering in Annex 4. GRSG noted general support on the proposal and requested the secretariat to circulate GRSG-115-09 with an official symbol for consideration at the next GRSG session.

20. The expert from OICA informed GRSG about the adoption by WP.29 at its November 2017 session of the revised guidelines for the regulatory procedures and transitional provisions (ECE/TRANS/WP.29/1044/Rev.2 - General Guidelines). He reported on the recent discussion in WP.29 (ECE/TRANS/WP.29/1139, paras. 63-66) that the new guidelines could result, for some of the UN Regulations, in difficulties linked to extensions of type approvals previously granted. Upon the request by WP.29, he introduced GRSG-115-27-Rev.1 inserting new transitional provisions to allow, for a limited time period, extensions of existing type approvals.

21. GRSG endorsed the proposal as reproduced below. The secretariat was requested to submit it to WP.29 and AC.1 as a draft Supplement 9 to the 01 series of amendments to UN Regulation No. 43 for consideration at their March 2019 sessions. *(Note by the secretariat: At its November 2018 session, WP.29 confirmed that the amendment proposals prepared by GRSG for introducing the transitional provisions would not need to be put forward for*

adoption by WP.29 as these were covered by its decision in June 2018, see paras. 91 and 92 of the report ECE/TRANS/WP.29/1142 and para. 65 of ECE/TRANS/WP.29/1139.)

Insert a new paragraph 12.8., to read:

"12.8. Until 31 December 2019, Supplement 1, Supplement 4, Supplement 5 and Supplement 6 to the 01 series of amendments to this Regulation may not apply to extensions of approvals that were originally granted prior to the entry into force of Supplement 1, Supplement 4, Supplement 5 and Supplement 6."

VII. Awareness of the proximity of Vulnerable Road Users (agenda item 6)

Documentation: Informal document GRSG-115-40

22. GRSG noted the report (GRSG-115-40) by the expert from Japan on the progress of IWG on Awareness of Vulnerable Road Users Proximity (VRU-Proxi). He underlined that the purpose of the amendment by IWG was to provide the driver with a clear vision on the close-proximity rear area of the vehicle, when moving rearward. He added that IWG had agreed on a multimodal approach on the basis of direct or indirect vision devices (or a combination of both), camera monitor systems or obstacle detection systems. He concluded that the forthcoming meeting of IWG on VRU-Proxi was scheduled to be held in Yokohama (Japan) from 5 to 7 February 2019.

A. UN Regulation No. 46 (Devices for indirect vision)

Documentation: Informal document GRSG-115-39

23. On behalf of IWG on VRU-Proxi, the expert from Japan introduced GRSG-115-39 proposing amendments to UN Regulation No. 46 to provide the driver, when moving his vehicle backwards, with a full field of vision on the rear proximity of the vehicle without any blind spots. He underlined that the group's intention to submit the proposal as a new 05 series of amendments, subject to further considerations by IWG on the scope of application and on transitional provisions. He volunteered to prepare in due time a revised proposal for submission to the secretariat.

24. The GRSG Chair welcomed the good progress of work and invited all experts to send their comments to the expert from Japan. GRSG agreed to resume consideration of this subject at the next GRSG session in April 2019 on the basis of an official document.

B. New UN Regulation on Blind Spot Information Systems (BSIS)

Documentation: ECE/TRANS/WP.29/GRSG/2018/24
Informal documents GRSG-115-10-Rev.1, GRSG-115-13, GRSG-115-24, GRSG-115-30, GRSG-115-31, GRSG-115-33, GRSG-115-36 and GRSG-115-37

25. The expert from EC reported on the outcome of IWG on VRU-Proxi on ECE/TRANS/WP.29/GRSG/2018/24 for a new UN Regulation on BSIS. He added that IWG experts had agreed on a number of further amendments to the proposal as reflected in GRSG-115-10. The experts from Germany presented GRSG-115-33 that summarizes the amendments proposed by IWG, and GRSG-115-37 that explains the psychological approach of the driver's turning information concept. GRSG noted GRSG-115-13 on the

draft ISO standard 19206:4 referred to in the new draft UN Regulation on BSIS. The expert from OICA introduced GRSG-115-24 on the need to limit, in a first step, the scope of the new UN Regulation to vehicles of categories N₂ (with a permissible technical mass higher than 8 tons) and N₃ only. GRSG endorsed that position and mandated IWG on VRU-Proxi to work further on a possible extension of the scope to other categories vehicles. The expert from Israel proposed to amend paragraph 5.5.3. on the conditions to activate the warning signal (GRSG-115-36). With respect to the testing procedure of BSIS, the expert from CLEPA presented GRSG-115-30 on the ambient light conditions and GRSG-115-31 on the distance between the vehicle and the bicycle.

26. As a result of the discussion on GRSG-115-10-Rev.1, GRSG adopted ECE/TRANS/WP.29/GRSG/2018/24 as amended by Annex II to this report. The secretariat was requested to submit it to WP.29 and AC.1 as a new draft UN Regulation on BSIS for consideration at their March 2019 sessions.

VIII. UN Regulation No. 55 (Mechanical couplings) (agenda item 7)

Documentation: ECE/TRANS/WP.29/GRVA/2018/10
ECE/TRANS/WP.29/GRVA/2018/11
Informal documents GRSG-115-11-Rev.1 and GRSG-115-34

27. Upon the decision of WP.29 (see para. 3 above), GRSG noted a proposal transmitted by GRVA to correct UN Regulation No. 55 (ECE/TRANS/WP.29/GRVA/2018/10). GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 as Corrigendum 1 to Supplement 4 to the 01 series of amendments to UN Regulation No. 55 for consideration at their March 2019 sessions.

28. The expert from Poland presented ECE/TRANS/WP.29/GRVA/2018/11 clarifying the application of the provisions in Annex 1 of the UN Regulation. GRSG noted a number of comments. The expert from EC raised a study reservation. The Chair invited the expert from Poland to revise his proposal and to insert some concrete examples into the justification. GRSG agreed to resume consideration of this subject at its next session.

29. Recalling the purpose of the transitional provisions adopted for UN Regulation No. 43 (para. 21 above), the expert from OICA introduced GRSG-115-11-Rev.1 on similar provisions for UN Regulation No. 55. GRSG endorsed the proposal as reproduced below. The secretariat was requested to submit it to WP.29 and AC.1 as a draft Supplement 8 to the 01 series of amendments to UN Regulation No. 55 for consideration at their March 2019 sessions. (*See note by the secretariat under para. 21 above.*)

Insert a new paragraph 13.4., to read:

"13.4. Until 31 December 2019, Supplement 1, Supplement 4, Supplement 5 and Supplement 6 to the 01 series of amendments to this Regulation may not apply to extensions of approvals that were originally granted prior to the entry into force of Supplement 1, Supplement 4, Supplement 5 and Supplement 6."

30. The expert from EC proposed to update the provisions on removable mechanical couplings fitted to motor vehicles, in particular on the need to provide clear information to the driver (GRSG-115-34). GRSG noted some support. The expert from OICA raised a study reservation. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-115-34 with an official symbol.

IX. UN Regulation No. 62 (Anti-theft for mopeds/motorcycles) (agenda item 8)

Documentation: ECE/TRANS/WP.29/GRSG/2018/15

31. The expert from Germany introduced ECE/TRANS/WP.29/GRSG/2018/15 to insert into UN Regulation No. 62 new provisions for electromechanical and electronic device (such as a transponder) in line with UN Regulation No. 116 (para. 49 below). GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 3 to UN Regulation No. 62 for consideration at their March 2019 sessions.

X. Amendments to gas-fuelled vehicle regulations (agenda item 9)

Documentation: Informal document GRSG-115-05

32. GRSG noted that the European Liquefied Petroleum Gas Association (AEGPL) was renamed to LG Europe.

33. The expert from Germany reported on the work progress of the task force on gas-fuelled vehicle regulations during its meeting in Cologne (Germany) on 27 and 28 February 2018 (GRSG-115-05). GRSG welcomed the information.

A. UN Regulation No. 67 (LPG vehicles)

Documentation: ECE/TRANS/WP.29/GRSG/2017/22
ECE/TRANS/WP.29/GRSG/2018/2
ECE/TRANS/WP.29/GRSG/2018/8
ECE/TRANS/WP.29/GRSG/2018/20

34. In the absence of a delegate from Turkey the Chair suggested deferring the discussion on ECE/TRANS/WP.29/GRSG/2017/22 to the next GRSG session.

35. The expert from OICA informed GRSG that the proposal in ECE/TRANS/WP.29/GRSG/2018/2 was still under discussion in the task force on gas-fuelled vehicle regulations. GRSG agreed to resume consideration of this subject at the next GRSG session and to keep ECE/TRANS/WP.29/GRSG/2018/2 on the agenda.

36. The expert from Poland recalled the purpose of ECE/TRANS/WP.29/GRSG/2018/8 to adapt the Regulation to technical progress, specifically for the definition of a type of container and Annex 2B. The expert from LG Europe introduced ECE/TRANS/WP.29/GRSG/2018/20 as a counterproposal. A number of experts welcomed the amendments to Annex 2B, but could not support the amendments to the definition of "Type of container". After discussion, GRSG adopted ECE/TRANS/WP.29/GRSG/2018/20 except the amendments to paragraph 2.4. The secretariat was requested to submit the proposal as amended to WP.29 and AC.1 as draft Supplement 16 to the 01 series of amendments and as draft Supplement 1 to the 02 series of amendments to UN Regulation No. 67 for consideration at their March 2019 sessions.

B. UN Regulation No. 110 (CNG and LNG vehicles)

Documentation: ECE/TRANS/WP.29/GRSG/2017/29
ECE/TRANS/WP.29/GRSG/2018/11

ECE/TRANS/WP.29/GRSG/2018/12
ECE/TRANS/WP.29/GRSG/2018/13
ECE/TRANS/WP.29/GRSG/2018/16
Informal documents GRSG-115-06, GRSG-115-18-Rev.2 and GRSG-115-19

37. Recalling the discussion of GRSG at its previous session, the expert from Italy introduced ECE/TRANS/WP.29/GRSG/2018/16 to amend Annex 3A of the Regulation on the test requirements for Compressed Natural Gas (CNG) cylinders to avoid structural failures during their service life. The expert from NGV Global proposed some further clarifications (GRSG-115-06) and a new definition on "certified cylinder". The proposals received general support.

38. The expert from OICA presented ECE/TRANS/WP.29/GRSG/2018/13 to adapt the text of the Regulation to the current technology on the gas flow adjuster in the carburettor or injector. GRSG noted a number of comments and proposals for amendments.

39. The expert from OICA introduced GRSG-115-18-Rev.2 amending the Regulation with respect to the inspection requirements for the periodic requalification of CNG cylinders to avoid structural failures during their service life. Finally, GRSG adopted ECE/TRANS/WP.29/GRSG/2018/16, ECE/TRANS/WP.29/GRSG/2018/13 and GRSG-115-18-Rev.2 as reproduced in Annex III to this report. The secretariat was requested to submit the proposals to WP.29 and AC.1 as draft Supplement 2 to the 03 series of amendments to UN Regulation No. 110 for consideration at their March 2019 sessions.

40. The expert from the Netherlands presented ECE/TRANS/WP.29/GRSG/2018/11 on new requirements on "CNG compressor" and "CNG accumulator" components used in LNG/CNG systems. The expert from OICA stated that the proposal by the Netherlands result in changes of the level of the technical requirements for vehicles equipped with CNG compressors and/or accumulators. He introduced GRSG-115-19 proposing to submit the new requirements as a new 04 series of amendments to UN Regulation No. 110 together with appropriate transitional provisions.

41. Finally, GRSG adopted ECE/TRANS/WP.29/GRSG/2018/11, as amended below. The secretariat was requested to submit the proposal to WP.29 and AC.1 as draft 04 series of amendments to UN Regulation No. 110 for consideration at their March 2019 sessions.

Insert new paragraphs 24.22. to 24.25. (Transitional provisions), to read:

"24.22. As from the official date of entry into force of the 04 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 04 series of amendments.

24.23. As from 1 September 2022, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September 2022.

24.24. Until 1 September 2024, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September 2022.

24.25. As from 1 September 2024, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation."

42. The expert from the Netherlands introduced ECE/TRANS/WP.29/GRSG/2018/12 to insert new requirements for vehicle gas systems to provide gaseous fuel to a generator that would provide electrical power to accessories or other systems on the vehicle. GRSG noted

general support on the proposal. GRSG adopted ECE/TRANS/WP.29/GRSG/2018/12, as amended below. The secretariat was requested to submit the proposal to WP.29 and AC.1 as part (see para. 41) of draft 04 series of amendments to UN Regulation No. 110 for consideration at their March 2019 sessions.

Through the whole proposal, replace the words "second engine" by "secondary engine".

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

Documentation: ECE/TRANS/WP.29/GRSG/2018/5
ECE/TRANS/WP.29/GRSG/2018/18
ECE/TRANS/WP.29/GRSG/2018/19
Informal document GRSG-113-11-Rev.1

43. The expert from France introduced ECE/TRANS/WP.29/GRSG/2018/19 to restore consistency in UN Regulation No. 73 between the provisions related to the installation of Lateral Protection Devices (LPD) of an approved type according to Part II of the Regulation and those related to vehicles with regard to their LPD. GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 2 to the 01 series of amendments and as draft Supplement 1 to the 02 series of amendments to UN Regulation No. 73 for consideration at their March 2019 sessions.

44. Recalling the discussion of GRSG at its previous meetings, the expert from France stated that more time was needed to find an agreement on the proposal to improve the performance level of LPD for a better protection of vulnerable road users (ECE/TRANS/WP.29/GRSG/2018/18). GRSG agreed to defer the discussion on this subject to its next session.

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

Documentation: ECE/TRANS/WP.29/2018/126

45. GRSG noted that the adopted proposal to align UN Regulation No. 105 (ADR vehicles) with the new edition 2019 of European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) was listed on the agenda of the forthcoming WP.29 session of November 2018 (ECE/TRANS/WP.29/2018/126). GRSG agreed to remove this item from the agenda of the next session.

XIII. UN Regulation No. 116 (Anti-theft and alarm systems) (agenda item 12)

Documentation: ECE/TRANS/WP.29/GRSG/2017/23
ECE/TRANS/WP.29/GRSG/2017/24/Rev.1
ECE/TRANS/WP.29/GRSG/2017/25 and Corr.1
ECE/TRANS/WP.29/GRSG/2018/14
ECE/TRANS/WP.29/GRSG/2018/25
Informal documents GRSG-115-20 and GRSG-115-28-Rev.1

46. The expert from OICA informed GRSG about his decision to resign from his function as GRSG Ambassador to IWG on the International Whole Vehicle Type Approval (IWVTA), due to increased workload. He wondered if the function was still needed as UN Regulation No. 0 on IWVTA had entered recently into force. He reported on the status of

documentation on the splitting of UN Regulation No. 116 (ECE/TRANS/WP.29/GRSG/2017/23, ECE/TRANS/WP.29/GRSG/2017/24/Rev.1 and ECE/TRANS/WP.29/GRSG/2017/25) and invited all experts to send him their comments. He offered to prepare a set of final documents after the discussions at a further meeting in conjunction with the next GRSG session with the aim to adopt those documents at the 117th GRSG session. GRSG endorsed the proposed road map and agreed to keep the documents on the agenda as reference documents. The Chair thanked Mr. O. Fontaine for his commitment as GRSG Ambassador on IWVTA and his contributions in this function.

47. The expert from OICA presented ECE/TRANS/WP.29/GRSG/2018/14 on the removal of references to the European standards on frequencies in UN Regulation No. 116. GRSG adopted the document as amended below and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 6 to UN Regulation No. 116 for consideration at their March 2019 sessions.

New paragraph 1.9., replace "radio transmission" by "radio transmission frequencies".

48. The expert from OICA introduced ECE/TRANS/WP.29/GRSG/2018/25 to clarify the provisions on the environmental testing of keys as components that were not embedded in the vehicle. GRSG noted a number of comments and a study reservation by the expert from Germany. GRSG agreed to resume consideration of the document at its next session.

49. Recalling the discussion of GRSG at its previous sessions on the need to develop an appropriate amendment to UN Regulation No. 116 for new innovative vehicle alarms systems, the expert from OICA proposed to amend the definitions of keys (GRSG-115-20). GRSG noted a number of comments and study reservations mainly on the security of such systems. The expert from OICA reported that the issue of cybersecurity was currently discussed in a specific task force of the WP.29 informal working group on Intelligent Transport Systems / Automated Driving (ITS/AD). He added that the group was expected to develop a new horizontal UN Regulation on cybersecurity. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-115-20 with an official symbol.

50. The expert from OICA, in reference to the discussion on transitional provisions (paras. 21 and 29 above), introduced GRSG-115-28-Rev.1 on similar provisions for UN Regulation No. 116. GRSG adopted the proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 as part (see para. 47) of draft Supplement 6 to UN Regulation No. 116 for consideration at their March 2019 sessions. (*See note by the secretariat under para. 21 above.*)

Paragraph 13.2., amend to read:

"13.2. Approval of a vehicle type

13.2.1. As from **36** months after the date of entry into force of Supplement 1 to the original version of the Regulation, original version of the Regulation.

13.2.2. **Until 31 December 2019, Supplement 5 to the original version of this Regulation may not apply to extensions of approvals that were originally granted prior to the entry into force of Supplement 5.**"

XIV. UN Regulation No. 121 (Identification of controls, tell-tales and indicators) (agenda item 13)

Documentation: ECE/TRANS/WP.29/GRSG/2018/6
Informal documents GRSG-115-14-Rev.1 and GRSG-115-29-Rev.1

51. The expert from OICA recalled the discussion (ECE/TRANS/WP.29/GRSG/2018/6) at the previous GRSG session on the handling of colour changes of controls, tell-tales and indicators by deleting footnote ¹⁸ to table 1 and inserting only a reference to standard ISO 2575. Underlining the importance of colour for tell-tales, the expert from France preferred to keep footnote ¹⁸. The expert from OICA offered to review the proposal and to insert a new footnote for the tell-tales that impose colour. GRSG agreed to resume consideration of this subject at its next session on the basis of a revised document jointly prepared by the experts from France and OICA.

52. The expert from the Republic of Korea presented GRSG-115-14-Rev.1 to add in UN Regulation No. 121 a new symbol for "power on/power off" controls in vehicles equipped with an electric powertrain, such as electric vehicles. GRSG noted some comments. The expert from the Republic of Korea volunteered to review his proposal taking into account the comments received. GRSG agreed to resume consideration of this subject at its next session in April 2019 on the basis of an official document.

53. Further to the discussion on the transitional provisions (paras. 21, 29 and 50 above), the expert from OICA presented GRSG-115-29-Rev.1 on additional provisions for UN Regulation No. 121. GRSG adopted the proposal as reproduced below and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 4 to the 01 series of amendments to UN Regulation No. 121 for consideration at their March 2019 sessions. (*See note by the secretariat under para. 21 above.*)

Add a new paragraph 12.4., to read:

"12.4. Until 31 December 2019, Supplement 2 to the 01 series of amendments to this Regulation may not apply to extensions of approvals that were originally granted prior to the entry into force of Supplement 2."

XV. UN Regulation No. 122 (Heating systems) (agenda item 14)

Documentation: ECE/TRANS/WP.29/GRSG/2018/21
ECE/TRANS/WP.29/GRSG/2018/22
Informal document GRSG-115-21

54. The expert from France proposed to amend UN Regulation No. 122 to incorporate new provisions on systems for heating the passenger compartment by heat pump (ECE/TRANS/WP.29/GRSG/2018/21). The expert from OICA introduced GRSG-115-21 proposing to submit the new requirements as a new 01 series of amendments to UN Regulation No. 122 together with appropriate transitional provisions. The expert from France added that the new provisions should be considered as "if-fitted" requirements and, therefore, not increase the level of stringency of the UN Regulation. He also introduced ECE/TRANS/WP.29/GRSG/2018/22 to limit possible exemptions of electric heating devices involved in heating the passenger compartment.

55. GRSG adopted both proposals as reproduced in Annex IV to this report. The secretariat was requested to submit the proposal to WP.29 and AC.1 as draft Supplement 5 to UN Regulation No. 122 for consideration at their March 2019 sessions.

XVI. UN Regulation No. 144 (Accident Emergency Call Systems) (agenda item 15)

Documentation: ECE/TRANS/WP.29/GRSG/2018/23
Informal documents GRSG-115-22 and GRSG-115-23

56. The expert from OICA presented ECE/TRANS/WP.29/GRSG/2018/23 to correct the scope of the new UN Regulation No. 144 on AECS, as discussed at the 114th session of GRSG. He also introduced GRSG-115-22 and GRSG-115-23 to correct editorial and numbering errors as well as to clarify references to some passive safety regulations. The proposals received a number of comments. Finally, GRSG agreed to set up, under the lead of OICA, a task force to further discuss and resolve the remaining open issues. GRSG agreed to have final review of the documents at its next session in April 2019 on the basis of revised proposal by the task force. GRSG agreed to keep ECE/TRANS/WP.29/GRSG/2018/23 on the agenda of its next session.

XVII. UN Regulation No. 0 (International Whole Vehicle Type Approval) (agenda item 16)

Documentation: ECE/TRANS/WP.29/2018/82 and ECE/TRANS/WP.29/2018/165

57. GRSG noted that (a) a new draft 01 series of amendments to UN Regulation No. 0 on IWVTA was listed on the agenda of the forthcoming November session of WP.29 (ECE/TRANS/WP.29/2018/82) as well as (b) a draft amendment to Schedule 4 of the 1958 Agreement on the numbering of type approvals (ECE/TRANS/WP.29/2018/165).

58. The Chair recalled the information by the expert from OICA (see para. 46 above) on the resignation his function as GRSG Ambassador of IWVTA. He announced his intention to seek the advice of WP.29 on the need to continue this function. GRSG welcomed the proposal and agreed to resume consideration of this subject at the next GRSG session.

XVIII. Exchange of views on Vehicle Automation (agenda item 17)

Documentation: Informal documents WP.29-175-29 and GRSG-115-02

59. The Chair recalled the information by the secretariat (GRSG-115-02) on the decision of WP.29 to convert GRRF into GRVA and to reallocate certain tasks of GRRF to other GRs. He added that AC.3 also recommended that GRSG resume consideration on the Event Data Recorder (EDR) which aims to cover conventional vehicles and especially automated/autonomous vehicles (see WP.29-175-29). Thus, GRSG noted that GRVA already considered developing new provisions for Data Storage System for Automated Driving (DSSAD). The expert from OICA welcomed the proposal to go forward with a new UN GTR on EDR. He added that in the near future, a long list of parallel activities would be added on the agendas of different GRs on similar devices but with different functions (software) and/or level of stringencies (e.g. for cybersecurity). He concluded that the type approval process of automated vehicle systems would result in a different system than the one for conventional vehicles. He questioned the need to nominate a new GRSG ambassador on vehicle automation who would ensure a good future exchange of views and coordination under this new agenda item.

60. GRSG agreed to re-insert an item on EDR in the agenda of its next session, subject to the decision by WP.29/AC.3 in November 2018. The Chair invited all contracting parties to the 1998 Agreement to consider their possible technical sponsorship for a new UN GTR

on EDR. He also volunteered to seek the advice of WP.29 on the need to nominate an ambassador on vehicle automation for each GR.

XIX. The strategy of the Inland Transport Committee (agenda item 18)

Documentation: Informal document GRSG-115-42

61. GRSG noted a presentation by the secretariat on ITC-related matters, particularly on the ITC strategy 2030 and on the update of the United Nations management reform (GRSG-115-42). The Chair invited the interested government experts to contact their national representative in WP.29 sessions on this matter.

XX. Election of Officers (agenda item 19)

62. In compliance with Rule 37 of the Rules of Procedure (ECE/TRANS/WP.29/690/Rev.1), GRSG called for the election of officers on Wednesday afternoon, 10 October 2018. Mr. A. Erario (Italy) was unanimously re-elected as Chair and Mr. K. Hendershot (Canada) as Vice-Chair for the GRSG sessions scheduled for 2019.

XXI. Other business (agenda item 20)

A. UN Regulation No. 58 (Rear underrun protection)

Documentation: ECE/TRANS/WP.29/GRSG/2018/26
Informal document GRSG-115-03

63. GRSG noted GRSG-115-03 on correcting the provisions of model B of the approval mark. The expert from Finland suggested correcting also Annex 1, item 1 to read "Trade name or mark of device" and item 2 to read "Device type". GRSG also noted ECE/TRANS/WP.29/GRSG/2018/26 which proposes to correct the French version of UN Regulation No. 58.

64. GRSG adopted the proposals as reproduced in Annex V to this report and requested the secretariat to submit it to WP.29 and AC.1 as Corrigendum 1 to Revision 3 of UN Regulation No. 58 for consideration at their March 2019 sessions.

B. Consolidated Resolution on the construction of vehicles (R.E.3)

Documentation: Informal document GRSG-115-12

65. The expert from IMMA introduced GRSG-115-12, in reference to ECE/TRANS/WP.29/GRSG/2015/30, which amend the provisions of R.E.3 to allow the application of "twin wheels" on all vehicles of category L. The expert from EC suggested reading in the proposed paragraph 2.1.1. "twin wheels configuration" instead of "twin wheels". A number of experts endorsed the proposal. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-115-12 with an official symbol.

C. UN Regulation No. 93 (Front underrun protection)

Documentation: Informal document GRSG-115-25

66. The expert from EC introduced GRSG-115-25 to update the provisions on frontal underrun protection approved as integrated part of the vehicle, in particular, to allow for a more rounded shape of the cab for a better aerodynamic performance. The proposal received a number of comments and a study reservation by the expert from the Netherlands.

67. The expert from EC volunteered to review his proposal taking into account the comments received. GRSG agreed to resume consideration of this subject at its next session in April 2019 on the basis of an official document.

D. Tributes to Messrs. Kincl and Gouweleeuw

68. Mr. L. Kincl (Czechia) would soon retire, and GRSG thanked him for his considerable contributions to its activities over the last decades. GRSG wished him a long and happy retirement.

69. GRSG noted that Mr. R. Gouweleeuw (EC) had taken over new responsibilities in his country and would, therefore, no longer attend the sessions. GRSG acknowledged his continued support and contributions during the sessions and wished him all the best for his future activities.

XXII. Provisional agenda for the 116th session

70. The following provisional agenda was adopted for the 116th session of GRSG, scheduled to be held in Geneva from 8 (2.30 p.m.) to 12 April (12.30 p.m.) 2019:¹

1. Adoption of the agenda.
2. Amendments to regulations on buses and coaches:
 - (a) UN Regulation No. 107 (M₂ and M₃ vehicles).
 - (b) UN Regulation No. 118 (Burning behaviour of materials).
3. UN Regulation No. 26 (External projections of passenger cars).
4. UN Regulation No. 34 (Prevention of fire risks).
5. UN Regulation No. 35 (Foot controls).
6. Amendments to safety glazing regulations:
 - (a) UN Global Technical Regulation No. 6 (Safety glazing).
 - (b) UN Regulation No. 43 (Safety glazing).
7. Awareness of the proximity of Vulnerable Road Users:
 - (a) UN Regulation No. 46 (Devices for indirect vision).
 - (b) New UN Regulation on Blind Spot Information Systems.
8. UN Regulation No. 55 (Mechanical couplings).
9. Amendments to gas-fuelled vehicle regulations:

¹ GRSG noted that the deadline for submission of official documents to the UNECE secretariat was 11 January 2019, twelve weeks prior to the session.

- (a) UN Regulation No. 67 (LPG vehicles).
- (b) UN Regulation No. 110 (CNG and LNG vehicles).
- 10. UN Regulation No. 73 (Lateral protection devices).
- 11. UN Regulation No. 93 (Front underrun protection).
- 12. UN Regulation No. 116 (Anti-theft and alarm systems).
- 13. UN Regulation No. 121 (Identification of controls, tell-tales and indicators).
- 14. UN Regulation No. 144 (Accident Emergency Call Systems).
- 15. UN Regulation No. 0 (International Whole Vehicle Type Approval).
- 16. Consolidated Resolution on the Construction of Vehicles (R.E.3).
- 17. Event Data Recorder (EDR).
- 18. Exchange of views on View Automation.
- 19. Other business.

Annex I

List of informal documents considered during the session

List of informal documents (GRSG-115-...) distributed during the session (English only)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(GRSG Chair) Running order of the 115th session of GRSG (9 – 12 October 2018)	(f)
2-Rev.1	(Secretariat) General information and highlights of WP.29 at its session of June 2018	(f)
3	(Secretariat) Proposal for a corrigendum to Revision 3 of UN Regulation No. 58	(a)
4	(Norway) Collision protection of the front section on buses	(d)
5	(Germany) Report: Second meeting of the GRSG task force on "gas-fueled vehicle regulations"	(f)
6	(NL and NGV Global) Suggestion for changes to ECE/TRANS/WP.29/GRSG/2018/16 (proposed amendments to UN Regulation No. 110 (CNG and LNG vehicles) submitted by Italy)	(b)
7	(France) Behaviour of M2 and M3 general construction in case of Fire Event (BMFE)	(f)
8	(France) Suggestion for changes to ECE/TRANS/WP.29/GRSG/2018/17 (proposed amendments to UN Regulation No. 26 (External projection of passenger cars) submitted by France)	(e)
9	(France) Suggestion for an amendment to UN Regulation No. 43 (Safety glazing)	(c)
10-Rev.1	(VRU-Proxi) Revised proposal for a new UN Regulation on uniform provisions concerning the approval of motor vehicles with regard to the Blind Spot Information System for the Detection of Bicycles (Amendments to ECE/TRANS/WP.29/GRSG/2018/24)	(b)
11-Rev.1	(OICA) UN Regulation No. 55 (Mechanical coupling) - Proposal to adapt the transitional provisions according to the decision of WP.29 at its 175th session	(b)
12	(IMMA) Proposal for amendments to the Consolidated Resolution on the Construction of Vehicles (R.E.3)	(c)
13	(ISO) ISO standard referenced to in draft UN Regulation on Blind Spot Information Systems (BSIS)	(f)
14-Rev.1	(Republic of Korea) Proposal for Supplement 3 to the 01 series of amendments to UN Regulation No. 121 (Identification of controls, tell-tales and indicators)	(c)
15	(OICA) Proposal for a Supplement to the 08 series of amendments to UN Regulation No. 107	(b)
16	(OICA) Proposal for Supplement 4 to the 03 series of amendments to UN Regulation No. 26 (External projections of passenger cars)	(c)
17	(OICA) Proposal for the 01 series of amendments to UN Regulation No. 35 (Foot controls)	(c)
18-Rev.2	(OICA) Revised proposal for amendments to the 03 series of amendments to UN Regulation No. 110 (CNG and LNG vehicles)	(b)
19	(OICA) Proposal for the 04 series of amendments to UN Regulation No. 110 (CNG and LNG vehicles)	(b)
20	(OICA) Proposal for amendments to UN Regulation No. 116 (Protection of vehicles against unauthorized use)	(c)
21	(OICA) Proposal for the 01 series of amendments to UN Regulation No. 122 (Heating systems)	(f)
22	(OICA) Proposal for amendments to UN Regulation No. 144 (ECE/TRANS/WP.29/GRSG/2018/23 on Accident Emergency Call Systems)	(e)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
23	(OICA) Proposal for amendments to UN Regulation No. 144 on Accident Emergency Call Systems	(e)
24	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRSG/2018/24 (Proposal for a new UN Regulation on uniform provisions concerning the approval of motor vehicles with regard to the Blind Spot Information System for the Detection of Bicycles)	(e)
25	(EC) Draft amendments to UN Regulation No. 93 (Front Underrun Protection)	(e)
26	(Italy) Proposal for Supplement 3 to the 07 series of amendments to UN Regulation No. 107 (M2 and M3 vehicles)	(f)
27-Rev.1	(OICA) UN Regulation No. 43 (Safety glazing): OICA proposal to adapt the transitional provisions according to the decision of WP.29 at its 175th session	(b)
28-Rev.1	(OICA) UN Regulation No. 116 (Antitheft devices): OICA proposal to adapt the transitional provisions according to the decision of WP.29 at its 175th session	(b)
29-Rev.1	(OICA) UN Regulation No. 121 (Controls and tell-tales): OICA proposal to adapt the transitional provisions according to the decision of WP.29 at its 175th session	(b)
30	(CLEPA) Proposal for amendments to the draft new UN Regulation on uniform provisions concerning the approval of motor vehicles with regard to the Blind Spot Information System for the Detection of Bicycles	(f)
31	(CLEPA) Proposal for amendments to the draft new UN Regulation on uniform provisions concerning the approval of motor vehicles with regard to the Blind Spot Information System for the Detection of Bicycles	(f)
32	(CLEPA) Proposal for Supplement 4 to the 03 series of amendments of UN Regulation No. 26 concerning the approval of vehicles with regard to their external projections	(f)
33	(Germany) Regulation on Blind Spot Information System for the Detection of Bicycles - Introduction and summary of changes from the IWG on VRU-Proxi	(f)
34	(EC) Draft amendments to UN Regulation No. 55 (Mechanical couplings)	(c)
35	(Republic of Korea) Progress report by PSG IWG	(f)
36	(Israel) Proposal for amendments to the draft new UN Regulation on uniform provisions concerning the approval of motor vehicles with regard to the Blind Spot Information System for the Detection of Bicycles	(f)
37	(Germany) Truck drivers' turning information concept - a psychological approach	(f)
38	(India) Comment on document ECE/TRANS/180/Add.6 Proposal for Amendment 2 to the Global Technical Regulation No. 6 (Safety Glazing)	(c)
39	(VRU-Proxi) Proposal for the 05 series of amendment to UN Regulation No. 46 (Devices for indirect vision)	(e)
40	(Japan) Status report of "Reversing Motion" in VRU-Proxi Informal Working Group	(f)
41	(OICA) UN Regulation No. 107 (Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction) - Draft proposal for a correction in several supplements and series of amendments of UN Regulation No. 107	(b)
42	(Secretariat) ITC-related matters: ITC strategy 2030 - UN management reform update	(f)

List of informal documents distributed at previous sessions of GRSG or WP.29

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
GRSG-113-11-Rev.1	(France) Lateral Protection Devices (UN Regulation No. 73)	(f)
GRSG-114-05	(Poland) UN Regulation No. 107 (Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction)	(f)
GRSG-114-16	(Italy) Proposal for Supplement 3 to the 07 series of amendments to UN Regulation No. 107 (M2 and M3 vehicles)	(f)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
GRSG-114-20	(India) Comment on ECE/TRANS/WP.29/GRSG/2018/7, Proposal for Supplement 8 to the 01 series of amendments to UN Regulation No. 43 (Safety Glazing)	(f)
WP.29-175-30	(India) Request for authorization to develop an amendment to global technical regulation No. 6 (Safety Glazing)	(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) Keep as a reference document/continue consideration.
- (e) Revised proposal for the next session.
- (f) Consideration completed or to be superseded.

Annex II

Amendments to ECE/TRANS/WP.29/GRSG/2018/24 on new draft UN Regulation on BSIS (para. 26)

Paragraph 1.1., amend to read:

- "1.1. This Regulation applies to the blind spot information system of vehicles of categories N_2 (> 8 t of technically permissible maximum mass) and N_3 . **Vehicles of categories N_2 (\leq 8 t of technically permissible maximum mass), M_2 and M_3 may be approved at the request of the manufacturer.**"

Paragraph 2.14., replace "forwardmost point" by "**foremost** point".

Paragraph 2.12., replace "ISO [WD]" by "ISO [CD]".

Paragraph 2.15., amend to read:

- "2.15. "*First point of information*" means ... taking into account **the moving speed of the vehicle plus an additional distance if the impact position is lower than 6 m.**"

Paragraph 5.3.1., amend to read:

- "5.3.1. The BSIS shall ... according to paragraph 6.6.

The BSIS shall warn the driver, by means of an optical signal, acoustical signal, haptic signal or any combination of these signals, when the risk of a collision increases.

An optical **information** signal shall be ... towards the bicycle trajectory."

Paragraph 5.3.2., replace "ISO [WD]" by "ISO [CD]".

Paragraph 5.4.2., amend to read:

- "5.4.2. The device emitting the information signal shall be located **at the near side at a horizontal angle greater than 30°** towards an axis parallel to the longitudinal median plane of the vehicle and going through the ocular reference point. **If the driver's seating position is located on the near side of the vehicle, this value may be reduced.**"

Paragraph 5.5.2., amend to read:

- "5.5.2. It shall be easily understandable for the driver to relate the warning signal to the potential collision. **In case the warning signal is an optical signal this signal shall also be visible by daylight and at night.**"

Paragraph 6.5.5., amend to read:

- "6.5.5. Do not operate the **direction indicators** during the test."

Paragraph 6.5.10., amend to read:

- "6.5.10. The test is passed ...

For vehicle speeds up ... collision point as specified in Appendix 1, Figure 1. **For vehicle speeds between 5 and 10 km/h, the value d_c shall be 5 m.**

For vehicle speeds above ... as specified in Appendix 1, Table 2."

Appendix 1, Table 1, the explanation of variable d_a , amend to read:

" d_a vehicle position at first point of information ($d_c + (6\text{m-Impact Position}) + 11.11$ m for vehicle speeds of 10 km/h and $d_c + (6\text{m-Impact Position}) + 22.22$ m for vehicle speeds of 20 km/h)"

Insert a new Annex 3, to read:

"Annex 3

Procedure to define performance requirements for test cases other than those shown in the test case table

According to paragraph 6.5.9., the Technical Service may test other test cases than those shown in Table 1, Appendix 1. In this case, the Technical Service is obliged to verify that the selected parameter combination would lead to a critical situation. As a guidance for this, the following procedure assists in specifying the performance requirements.

d_a – the value d_a is used for synchronization between vehicle and bicycle movement. It is computed by multiplying 8 seconds of constant speed travel with the bicycle speed as specified in the table:

$$d_a = 8\text{s} \cdot v_{\text{Bicycle}}$$

d_b – the value d_b is used for synchronization between vehicle and bicycle movement. It is composed of three parts. The first part corresponds to 8 seconds of constant travel of the truck:

$$d_{b,1} = 8\text{s} \cdot v_{\text{Vehicle}}$$

The second part shifts the synchronization by taking into account the impact position of the bicycle. It is given using the Impact Location L :

$$d_{b,2} = L$$

The third part then takes into account the longer travel of the truck due to negotiating a constant radius turn towards the collision point rather than just going straight ahead as the bicycle does.

The turn segment is approximated by a constant radius circle that ends as soon as the desired lateral displacement is achieved. Therefore d_b needs to be shifted by the difference distance between straight and turning.

It can be calculated using the turn radius R , the lateral displacement $Y = d_{\text{lateral}} + 0.25$ m (distance bicycle centreline to vehicle edge) and the impact location L .

$$d_{b,3} = R \cdot \cos^{-1}\left(\frac{R - Y}{R}\right) - \sqrt{R^2 - (R - Y)^2}$$

The final value for d_b is $d_{b,1}$ minus the other two parts $d_{b,2}$ and $d_{b,3}$:

$$d_b = 8\text{s} \cdot v_{\text{Vehicle}} - L - R \cos^{-1}\left(\frac{R - Y}{R}\right) + \sqrt{R^2 - (R - Y)^2}$$

The value d_c defines the last point of information. For vehicle speeds of 10 km/h and higher, it is the maximum of two values:

the first value has been derived from physical test runs and characterizes at what distance from the collision point the heavy vehicle turn is started at the earliest and by turning towards the outside, the value is:

15 m.

The second value is the stopping distance, considering reaction time and the brake deceleration a , using the parameters deceleration and reaction time (5 m/s² and 1.4 seconds, respectively):

$$d_{\text{Stop}} = v_{\text{vehicle}} \cdot t_{\text{react}} + \frac{v_{\text{Vehicle}}^2}{2 |a|}$$

Therefore, d_c is defined by

$$d_c = \text{MAX} \left(15 \text{ m}; v_{\text{vehicle}} \cdot t_{\text{react}} + \frac{v_{\text{Vehicle}}^2}{2 |a|} \right)$$

For vehicle speeds below 5 km/h, it is sufficient if the information signal is given at a distance corresponding to a TTC value of 1.4 seconds (similar to the static tests), and for **vehicle speeds above 5 and below 10 km/h**, the value d_c is reduced to 5 m.

Finally, d_a is the first point of information. It can be calculated by adding the distance corresponding to 4 seconds of vehicle travel time to d_c and correcting for the impact position in case the impact position is not 6 m:

$$d_d = d_c + 4s \cdot v_{\text{Vehicle}} + (6\text{m} - \text{Impact Position}).$$

These formulas allow to completely populate Table 1 in Appendix 1 for test cases other than those defined there."

Annex III

Draft Supplement 2 to the 03 series of amendments to UN Regulation No. 110 (CNG and LNG vehicles) (paras. 37-39)

Paragraphs 4.32. and 4.33., amend to read:

- "4.32. *"Gas injector"* means a device for introducing gaseous fuel into the engine or associated intake system. **A gas injector shall be considered as a gas flow adjuster.**
- 4.33. *"Gas flow adjuster"* means a gas flow restricting device, installed downstream of a pressure regulator, controlling gas flow to the engine. **The function of a gas flow adjuster can be performed by another component (e.g. gas injector).**"

Paragraph 4.56., amend to read:

- "4.56. *"Finished cylinders"* means completed cylinders that are ready for use, typical of normal production, complete with identification marks and external coating including integral insulation **and/or protection** specified by the manufacturer **on the design drawing for the cylinder.**

Insert a new definition 4.78., to read:

- "**4.78. *"Certified cylinder"* means a finished cylinder that complies with the tests described in this Regulation for finished cylinders and is approved.**"

Annex 3A, paragraphs 4.1.2. to 4.1.4.2., amend to read:

- "4.1.2. Use of cylinders
- The service conditions ... may safely be used to:
- (a) Manufacturers of cylinders;
- (b) Owners of **certified** cylinders;
-
- 4.1.3. Service life
- The service life for which **certified** cylinders are safe ... be 20 years.
- 4.1.4. Periodic requalification
- Recommendations for periodic requalification by visual inspection or testing during the service life shall be provided by the **cylinder manufacturer** on the basis of use under service conditions specified herein. Each **certified** cylinder shall be visually inspected at least every 48 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. **It is suggested to visually inspect under the support straps as well.** The visual inspection shall be performed by a competent agency approved or recognized by the Regulatory Authority, **in consideration of** the manufacturer's specifications: **Certified cylinders** without label containing mandatory information or with labels containing mandatory information that are illegible in any way shall be removed from service. If the **certified** cylinder can be positively identified by manufacturer and serial number, a replacement label may be applied, allowing the **certified** cylinder to remain in service. **Contracting Parties requiring a more frequent (than every 48 months) or more stringent**

periodic requalification of cylinders may do so in accordance with the national or regional requirements."

4.1.4.1. **Certified cylinders** involved in collisions

Certified cylinders that have been ... having jurisdiction. A **certified** cylinder that has not experienced ... otherwise the **certified** cylinder shall be returned to the manufacturer for evaluation.

4.1.4.2. Cylinders involved in fires

Certified cylinders that have been subject to the action of fire shall be reinspected by an agency authorized by the manufacturer, or condemned and removed from service."

Annex 3A

Paragraph 6.12., amend to read:

"6.12. Exterior environmental protection

The exterior of

(c) A protective coating A.9. (Appendix A to this annex).

Any coatings **or protections** applied to cylinders shall be such that the application process does not adversely affect the mechanical properties of the cylinder. The coating **or protection** shall be designed to facilitate subsequent in service inspection and the manufacturer shall provide guidance on coating **or protection** treatment during such inspection to ensure the continued integrity of the cylinder.

Manufacturers are advised Appendix H to this annex."

Paragraph 10.7.1., amend to read:

"10.7.1. General

Cylinder design qualification tests shall be in accordance with the requirements of paragraphs 8.6., 10.7.2., 10.7.3., **10.7.4. and 10.7.5.** of this annex, except that the LBB performance in paragraph 8.6.10. above is not required."

Add a new paragraph 10.7.5., to read:

"10.7.5. Impact damage test

One or more finished cylinders shall be subjected to an impact damage test according to Appendix A, paragraph A.20."

Paragraph 6.17., Table 6.7 (Change of design), twelfth row, in the first column replace "Dome shape" by "Dome **design**" and in the eighth column insert the figure "**X**" including a new note** to read: "**** Drop test A.20 only required for CNG3 and CNG4 designs**".

Annex 3A, Appendix A, paragraph A.17., amend to read:

"A.17. Composite flaw tolerance tests

For type CNG-2, CNG-3 and CNG-4 designs only, one finished cylinder, complete with protective coating, **a flaw tolerance test shall be performed on the cylindrical wall as well as on the minimum composite wall thickness of the weakest part(s) of the container as identified by an appropriate stress analysis as determined in Annex 3A, Appendix F, paragraph F.1. or full scale tests on finished cylinders.** The flaws shall be cut in the longitudinal direction into the composite. The flaws shall be greater than the visual inspection limits as specified by the manufacturer.

The flawed cylinder shall then be destroyed."

Annex 3B, paragraph 2.1.3., amend to read:

"2.1.3. Periodic requalification

Recommendations for periodic requalification by visual inspection or testing during the service life shall be provided by the **tank manufacturer** on the basis of use under service conditions specified herein. Each tank shall be visually inspected at least every 120 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. **It is suggested to visually inspect under the support straps as well.** The visual inspection shall be performed by a Technical Service designated or recognized by the Type Approval Authority, **in consideration of** the manufacturer's specifications: tanks without label containing mandatory information, or with labels containing mandatory information that are illegible in any way shall be removed from service. If the tank can be positively identified by manufacturer and serial number, a replacement label may be applied, allowing the tank to remain in service. **Contracting Parties requiring a more frequent (than every 120 months) or more stringent periodic requalification of tanks may do so in accordance with the national or regional requirements.**"

Annex IV

Draft Supplement 5 to UN Regulation No. 122 (Heating systems) (para. 54)

Paragraph 5.3., amend to read:

"5.3. Vehicle Installation Requirements for Combustion Heaters, **Electric Heaters and Heat Pump Heating Systems.**"

Paragraph 6.1.5., amend to read:

"6.1.5. *"Electric heater"* means a device using electric energy from an onboard or external source to increase the temperature of the interior of the vehicle. Electrical devices which are installed in addition to the main heating system **and whose main function is not to heat the interior of the vehicle** are not considered as electric heaters according to this Regulation. **For example**, electric devices installed in components for the sole purpose of heating that component are not considered as electric heaters according to this Regulation."

Add a new paragraph 6.1.6., to read:

"6.1.6. *"Heat pump heating system"* means any type of thermodynamic heating device deemed to make use of renewable energy that draws calories from one environment (air or water) in order to transfer them to another with a view to increasing the temperature of the interior of the vehicle. Heat pump heating systems which are installed in addition to the main heating system and whose main function is not to heat the interior of the vehicle are not considered as heat pump heating systems according to this Regulation."

Paragraph 6.2.1., the table, add a new row, to read:

"

<i>Heating system</i>	<i>Vehicle category</i>	<i>Annex 4 Air quality</i>	<i>Annex 5 Temperature</i>	<i>Annex 6 Exhaust</i>	<i>Annex 8 LPG safety</i>
...
Heat pump	M	Yes	Yes		
	N	Yes	Yes		
	O	Yes	Yes		

"

Insert new paragraphs 12. and 12.1., to read:

"12. TRANSITIONAL PROVISIONS

12.1. Until 31 December 2019, Supplement 5 to this Regulation may not apply to extensions of approvals that were originally granted prior to the entry into force of Supplement 5."

Annex V

Corrigendum 1 to Revision 3 of UN Regulation No. 58 (Rear underrun protection) (para. 64)

Annex 1 (Communication)

Items 1 and 2, correct to read:

- "1. Trade name or mark of **device**
2. **Device** type"

Item 6, correct to read (French version only):

- "6. Essai effectué sur un véhicule/sur des parties représentatives du châssis d'un véhicule² "

Annex 4 (Arrangements of approval marks), Model B, correct the text to read:

"The above approval mark affixed ... and UN Regulation No. 31 **also included the 03 series of amendments.**"

Annex VI

GRSG informal working groups

<i>Informal working group</i>	<i>Chair</i>	<i>Secretary</i>
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