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### World Forum for Harmonization of Vehicle Regulations

#### Working Party on General Safety Provisions

#### 116th session

Geneva, 1–5 April 2019

## Report of the Working Party on General Safety Provisions on its 116th session


### Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Attendance.....	1	3
II. Adoption of the agenda (agenda item 1) .....	2–4	3
III. Amendments to regulations on buses and coaches (agenda item 2).....	5–11	3
A. UN Regulation No. 107 (M <sub>2</sub> and M <sub>3</sub> vehicles) .....	5–9	3
B. UN Regulation No. 118 (Burning behaviour of materials).....	10–12	4
IV. UN Regulation No. 26 (External projections of passenger cars) (agenda item 3)...	13–15	5
V. UN Regulation No. 34 (Prevention of fire risks) (agenda item 4).....	16–17	5
VI. UN Regulation No. 35 (Foot controls) (agenda item 5) .....	18	5
VII. Amendments to safety glazing regulations (agenda item 6).....	19–25	6
A. UN Global Technical Regulation No. 6 (Safety glazing) .....	21–23	6
B. UN Regulation No. 43 (Safety glazing).....	24–25	6
VIII. Awareness of the proximity of Vulnerable Road Users (agenda item 7) .....	26–34	7
A. UN Regulation No. 46 (Devices for indirect vision) .....	28–33	7
B. New UN Regulation on Blind Spot Information Systems (BSIS) .....	34	8

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IX.	UN Regulation No. 55 (Mechanical couplings) (agenda item 8) .....	35–37	8
X.	Amendments to gas-fuelled vehicle regulations (agenda item 9).....	38–42	9
	A. UN Regulation No. 67 (LPG vehicles) .....	38–39	9
	B. UN Regulation No. 110 (CNG and LNG vehicles) .....	40–42	9
XI.	UN Regulation No. 73 (Lateral protective devices) (agenda item 10) .....	43	10
XII.	UN Regulation No. 93 (Front underrun protection) (agenda item 11) .....	44	10
XIII.	UN Regulation No. 116 (Anti-theft and alarm systems) (agenda item 12) .....	45–48	10
XIV.	UN Regulation No. 121 (Identification of controls, tell-tales and indicators) (agenda item 13) .....	49–51	11
XV.	UN Regulation No. 144 (Accident Emergency Call Systems) (agenda item 14)....	52–53	11
XVI.	UN Regulation No. 0 (International Whole Vehicle Type Approval) (agenda item 15)	54–55	12
XVII.	Consolidated Resolution on the construction of vehicles (R.E.3) (agenda item 16)	56–57	12
XVIII.	Event data recorder (agenda item 17).....	58–63	13
XIX.	Exchange of views on Vehicle Automation (agenda item 18) .....	64–66	13
XX.	Other business (agenda item 19) .....	67–74	14
	A. UN Regulation No. 58 (Rear underrun protection).....	68–71	14
	B. UN Regulation No. 62 (Anti-theft for mopeds/motorcycles) .....	72–73	15
	C. UN Regulation No. 122 (Heating systems) .....	74	15
XXI.	Provisional agenda for the 117th session .....	75	15
Annexes			
I.	List of informal documents considered during the session .....		17
II.	Draft 01 series of amendments to UN Regulation No. 35 (Foot controls) (para. 18).....		20
III.	Draft Supplement 2 to the 02 series of amendments to UN Regulation No. 67 (LPG vehicles) (para. 38) .....		22
IV.	Draft 03 series of amendments to UN Regulation No. 67 (LPG vehicles) (para. 39) .....		24
V.	GRSG informal working groups .....		25

## I. Attendance

1. The Working Party on General Safety Provisions (GRSG) held its 116th session from 1 to 5 April 2019 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, Democratic Republic of the Congo, Finland, France, Georgia, Germany, Hungary, India, Italy, Japan, Latvia, Netherlands, Norway, Poland, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, Switzerland, Turkey and United Kingdom of Great Britain and Northern Ireland (United Kingdom). An expert from the European Commission (EC) participated. Experts from non-governmental organizations participated: European Association of Automotive Suppliers (CLEPA), International Motorcycle Manufacturers Association (IMMA), International Motor Vehicle Inspection Committee (CITA), International Association for Natural Gas Vehicles (NGV Global), International Organization of Motor Vehicle Manufacturers (OICA), Liquid Gas Europe (LG Europe) and International Association for Natural Gas Vehicles (NGV Global). Upon the special invitation of the Chair, an expert from 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/2019/1 and Add.1  
Informal documents GRSG-116-01 and GRSG-116-19

2. GRSG considered and adopted the agenda proposed for the 116th session.
3. GRSG also adopted the running order (GRSG-116-01) as proposed by the Chair. GRSG noted GRSG-116-19 on the main decisions and recommendations of the World Forum taken during its November 2018 and March 2019 sessions (ECE/TRANS/WP.29/1142 and ECE/TRANS/WP.29/1145).
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. Amendments to regulations on buses and coaches (agenda item 2)

### A. UN Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles)

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/9  
ECE/TRANS/WP.29/GRSG/2019/13  
Informal documents GRSG-115-04, GRSG-116-24, GRSG-116-25 and GRSG-116-44

5. The expert from Belgium introduced ECE/TRANS/WP.29/GRSG/2019/9 and GRSG-116-44, proposing to amend the requirements in Annex 11 of UN Regulation No. 107 on the minimum mass for the front axle of articulated vehicles of Class I. The expert from the United Kingdom raised study reservations on braking performance and braking stability. GRSG noted that UN Regulation No. 13 would be applied in any case and supported the proposal in principle. The expert from Belgium volunteered to provide more detailed information on braking performances for the next GRSG session. GRSG decided

to adopt ECE/TRANS/WP.29/GRSG/2019/9 and requested the secretariat to submit it to WP.29 and the administrative Committee AC.1 of the 1958 Agreement as draft Supplement 8 to the 06 series of amendments, draft Supplement 3 to the 07 series of amendments and draft Supplement 2 to the 08 series of amendments to UN Regulation No. 107 for consideration at their November 2019 sessions, subject to a final review by GRSG at its October 2019 session.

6. The expert from Italy presented ECE/TRANS/WP.29/GRSG/2019/13 to amend Annex 3 of the Regulation on the test requirements of emergency door exits of all buses and coaches, and to clarify that the minimum number of emergency exits was four. The expert from Poland recalled that the current minimum number of emergency exits had been increased to five as a result of the amendments proposed by the former informal working group on Service Doors, Windows and Emergency Exits (SDWEE). After the discussion, GRSG preferred the status quo.

7. The expert from Norway recalled GRSG-115-04, from the previous session of GRSG, on the need to enhance the protection and integrity of the driver or crew member compartment of buses and coaches in a frontal collision. He stated that he had not received replies to his request for statistical or accidentology data on such collisions that resulted in risks for the driver and/or crew members.

8. The expert from OICA presented GRSG-116-25 on specific concerns for the position of escape hatches on M<sub>2</sub> buses of Class B in the transition from the 05 and 06 series of amendments to UN Regulation No. 107. She added that the location of such hatches was not relevant, particularly for short vehicles with a passenger compartment length of approximately 2.5 m. Thus, she proposed to amend the provisions of Annex 3 on the number and position of emergency exits of vehicles of Classes A and B (GRSG-116-24). GRSG noted general support for the proposal and some requests for clarification. The expert from OICA invited all interested experts to provide her with their comments. Thus, she volunteered to submit a revised proposal for consideration at the next session as an official document.

9. As a follow-up to the discussions of the Global Forum for Road Traffic Safety (WP.1) and the World Forum WP.29 on automated vehicles, GRSG agreed to prioritize the consideration of specifications for autonomous shuttles. The Chair questioned the need to review the applicability of existing requirements or the categorization of these vehicles. The expert from France offered to share at the next GRSG session, details on the status of French legislation on this subject.

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

*Documentation:* Informal documents GRSG-116-11 and GRSG-116-12

10. The expert from France, as Chair of the Informal Working Group (IWG) on the behaviour of the general construction of M<sub>2</sub> and M<sub>3</sub> vehicles in a fire event (BMFE), introduced GRSG-116-11 on the outcome of the recent meetings held in Madrid on 27 and 28 November 2018 and in Oslo on 27 and 28 February 2019. He reported that IWG had made good progress on developing a table of accidentology, on a full-scale test and on new provisions in UN Regulation No. 107 for the automatic opening of emergency exits and security instructions for passengers. He added that the group would follow-up on an ongoing research study by Germany on the toxicity and opacity of the smoke so as to define a simplified test method to determine toxicity of materials. GRSG welcomed this information and noted that the forthcoming meeting of IWG on BMFE was scheduled for Bergisch Gladbach (Germany) on 25 and 26 June 2019.

11. GRSG noted GRSG-116-12, tabled by BMFE, which proposes a correction to paragraph 4 of the IWG terms of reference. GRSG endorsed the proposal below:

*Report ECE/TRANS/WP.29/GRSG/93, Annex II, paragraph 4., correct to read:*

"4. The completion target and date for the work of the IWG shall be a draft amendment to UN Regulations Nos. 107 and 118 at the **119th** session of GRSG (October 2020)."

12. GRSG agreed to resume discussions at its next session.

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

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/2  
ECE/TRANS/WP.29/GRSG/2019/11  
Informal document GRSG-116-34

13. GRSG endorsed the request from OICA to defer ECE/TRANS/WP.29/GRSG/2019/2 to the next session of GRSG.

14. The expert from France introduced ECE/TRANS/WP.29/GRSG/2019/11 that clarifies the requirements on windscreen wipers with a simple generic drawing of the concerned areas. The expert from the United Kingdom did not support the proposal due to further requirements which had been added. The expert from CLEPA presented GRSG-116-34 which showed that more than fifty per cent of vehicle types would be impacted by the amendments proposed by France. He suggested that the proposal could be a new series of amendments with transitional provisions. The expert from OICA questioned the need for this amendment and sought further evidence, such as accidentology data.

15. GRSG agreed to resume discussions at its next session based on a revised official document. The Chair invited the experts from France, CLEPA and OICA to submit in due time a joint proposal for a new series of amendments to UN Regulation No. 26, including transitional provisions and exemptions, if necessary.

#### **V. UN Regulation No. 34 (Prevention of fire risks) (agenda item 4)**

16. The expert from EC informed GRSG that he would prepare amendments to UN Regulation No. 34 on rear impact tests, as a consequence of the revised General Safety Regulation (GSR) in the European Union that would protect drivers/passengers/pedestrians and cyclists. His approach would be two-step: (a) broaden the scope to include other categories of vehicles and (b) include new provisions for the post-crash performances of electric vehicles. He questioned if Part II of the UN Regulation on the approval of vehicles, so as to prevent fire risks in a collision, was the responsibility of GRSG or the Working Party on Passive Safety (GRSP).

17. GRSG welcomed the two-step approach from the expert of EC. In the second step, GRSG agreed to insert new provisions for electric vehicle safety based on the existing requirements stipulated in UN Regulations Nos. 94 and 95 and to include appropriate transitional provisions.

#### **VI. UN Regulation No. 35 (Foot controls) (agenda item 5)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/3  
Informal document GRSG-116-26-Rev.1

18. The expert from OICA introduced GRSG-116-26-Rev.1 superseding ECE/TRANS/WP.29/GRSG/2019/3 to clarify the measurement method for the lateral distances of the pedals to the nearest "wall" to the left. GRSG adopted ECE/TRANS/WP.29/GRSG/2019/3 as reproduced in Annex II to this report. The secretariat was requested to submit it to WP.29 and AC.1 as draft 01 series of amendments to UN Regulation No. 35 for consideration at their November 2019 sessions.

## **VII. Amendments to safety glazing regulations (agenda item 6)**

*Documentation:* Informal document GRSG-116-32

19. The expert from the Republic of Korea, Chair of IWG on Panoramic Sunroof Glazing (PSG), introduced GRSG-116-32 on the progress of the group at its eleventh meeting on 1 April 2019. The IWG Secretary said that further research had shown a wide variation in the dimensions of ceramic printed areas of glazing material. He added that IWG would continue working on a recommendation document on ceramic printed areas for consideration at the forthcoming session of GRSG in October 2019.

20. GRSG welcomed the progress made by PSG IWG and agreed to resume discussions at its next session on the basis of the draft recommendation.

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

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/4  
Informal documents GRSG-116-30 and GRSG-116-31

21. The expert from India introduced ECE/TRANS/WP.29/GRSG/2019/4 to align UN Global Technical Regulation (GTR) No. 6 with UN Regulation No. 43 on the optional use of laminated-glass panes with improved mechanical properties, particularly for the front, exterior, forward-facing glazing of the upper deck of a double-deck vehicle. The expert from Germany raised concern on the justification in the document.

22. The expert from the Republic of Korea presented GRSG-116-30 and GRSG-116-31 on the need to exempt in Zone I the possible opaque obscuration which is defined in paragraph 7.1.3.2.4. of the annexes on installing laminated-glass panes. The expert from Germany endorsed the proposed amendments, adding that the zone had to be clearly defined. The expert from Finland affirmed the necessity for similar amendments in UN Regulation No. 43.

23. GRSG agreed to resume consideration of these subjects at its October 2019 session. The experts from Germany and India volunteered to prepare revised official documents to that end. The expert from India also offered to review the authorization to develop Amendment 2 to UN GTR No. 6 and to follow up on the necessary procedure at the next sessions of the Executive Committee AC.3 of the 1998 Agreement.

### **B. UN Regulation No. 43 (Safety glazing)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/5

24. The expert from France introduced ECE/TRANS/WP.29/GRSG/2019/5 to clarify the test requirements on abrasion and resistance to simulated weathering in Annex 3.

25. GRSG adopted ECE/TRANS/WP.29/GRSG/2019/5 and requested the secretariat 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 November 2019 sessions.

## VIII. Awareness of the proximity of Vulnerable Road Users (agenda item 7)

*Documentation:* Informal documents GRSG-116-14 and GRSG-116-38

26. The expert from Switzerland reported on the recent meeting of the Task Force (TF) on reverse warning issues under the Working Party on Noise and Tyres (GRBP) (GRSG-116-14). He added that TF had proposed amendments on a "pause switch" for reverse warning sound devices which would be permitted if other safety devices (e.g. camera monitor systems) were activated. GRSG welcomed the information and agreed on the need to coordinate this subject between GRBP and GRSG to avoid overregulation of these devices. The Chair invited IWG on awareness of Vulnerable Road Users proximity in low speed manoeuvres (VRU-Proxi) to further consider this subject and to report back to GRSG at its next session in October 2019.

27. GRSG noted GRSG-116-38 tabled by VRU-Proxi which proposes to correct paragraph 4.(b) of the IWG terms of reference. The expert from OICA underlined that this modification would oblige IWG to develop two regulatory activities in parallel: vehicle turning in (a) forward motion and (b) reversing motion. GRSG endorsed the proposal below:

*Report ECE/TRANS/WP.29/GRSG/92, Annex III, paragraph 4.(b), correct to read:*

"4. The target completion dates ...

.....

(b) Reversing motion (e.g. Camera Monitoring Systems (CMS) or detection system): **118th** session of GRSG (April **2020**);"

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

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/10  
Informal documents GRSG-116-03, GRSG-116-04, GRSG-116-20, GRSG-116-27-Rev.1, GRSG-116-36 and GRSG-116-37

28. The expert from EC, Chair of IWG on VRU-Proxi, reported on the group's decision to withdraw ECE/TRANS/WP.29/GRSG/2019/10 on a new 05 series of amendments to UN Regulation No. 46 and to submit instead a new draft UN Regulation on devices for reversing motion and driver's awareness of vulnerable road users behind the vehicle (GRSG-116-36). He added that the new UN Regulation would address a broader scope, i.e. direct and indirect vision devices, and other detection devices. He sought the advice of GRSG on this new IWG approach. GRSG noted the requests by Italy and Sweden to apply these devices also on incomplete vehicles and, if possible, to already include it into the International Whole Vehicle Type Approval (IWVTA) scheme. GRSG endorsed the new IWG approach.

29. The Chair of VRU-Proxi announced that IWG would further review the terms of reference to extend the mandate for developing reversing safety by one additional year and to circulate, if possible, the new draft UN Regulation as an official document, for consideration by GRSG at its next session.

30. GRSG welcomed the good work progress and noted that the next meeting of IWG on VRU-Proxi was scheduled to be held in Berlin (Germany) on 17–19 June 2019.

31. The expert from Germany introduced GRSG-116-04 on the different interpretations by type approval authorities of the provisions of UN Regulation No. 46 on a possible automatic modification of the field of vision for the driver while driving (at the request of the driver). He sought the advice of GRSG on the need to amend UN Regulation No. 46 accordingly. The expert from France supported an amendment to allow devices to modify views for the driver.

32. The expert from Germany introduced GRSG-116-20 to amend the provisions for approval and installation of devices for indirect vision with temporarily modified views on motor vehicles. A presentation (GRSG-116-37) also justified the need to amend the UN Regulation and showed the safety improvements of devices using magnification and resolution in image processing. GRSG welcomed GRSG-116-20 and noted several comments from the experts of Canada, France, Sweden and EC on the need to clarify the proposal. The expert from Japan raised a study reservation, stating that the current provisions of the regulation already cover such devices and that an amendment was superfluous. Finally, GRSG agreed to resume consideration of GRSG-116-20 at its next session on the basis of an official document. The Chair invited the expert from Germany to submit in due time, a revised proposal taking into account the comments received.

33. The expert from OICA presented GRSG-116-27 to clarify the provisions on the required field of indirect vision of different classes of devices, in particular, as concerns the necessity to separate the different fields of vision and to indicate changes in magnification to the driver. The expert from Germany supported the proposal but preferred to add a sentence that indication lines shall not hide information. GRSG noted general support on the revised proposal and agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-116-27-Rev.1 with an official symbol. GRSG noted GRSG-116-03 with standard ISO 17386.

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

34. GRSG noted that the new draft UN Regulation on BSIS had been adopted by WP.29 at the March 2019 session and that it is expected to enter into force in October 2019. GRSG agreed to resume, at its next session, consideration of an extended scope and some further provisions.

## **IX. UN Regulation No. 55 (Mechanical couplings) (agenda item 8)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/6  
ECE/TRANS/WP.29/GRSG/2019/12  
Informal document GRSG-116-33

35. The expert from EC introduced ECE/TRANS/WP.29/GRSG/2019/6 to update the provisions on removable mechanical couplings fitted to motor vehicles, particularly on the need to provide clear information to the driver. He added that the proposal should not increase the stringency of the technical requirements but should rather provide the driver with appropriate information on the use of removable or repositionable mechanical coupling devices in the manufacturer's user manual or handbook. The expert from OICA stated that, under the 1958 Agreement, a user manual was not yet mandatory. Some experts endorsed that position. The expert from the Russian Federation expressed her preference to proceed with the proposal as a new series of amendments. The expert from EC volunteered



to prepare a revised official document for further consideration at the next session of GRSG.

36. The expert from France introduced ECE/TRANS/WP.29/GRSG/2019/12 to amend the wording of the communication document for a device or component approval. GRSG adopted the proposal and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 8 to the 01 series of amendments to UN Regulation No. 55 for consideration at their November 2019 sessions.

37. The expert from Poland presented GRSG-116-33 to clarify the application of the provisions in Annex 1 of the UN Regulation. GRSG noted several concerns on the proposal. The expert from EC offered to review the proposed text taking into account the comments received and to include a revised wording in an official document (see paragraph 35 above). GRSG welcomed this offer and agreed to resume consideration of this subject at its next session.

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

### **A. UN Regulation No. 67 (LPG vehicles)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2017/22  
ECE/TRANS/WP.29/GRSG/2018/2  
Informal documents GRSG-116-05-Rev.1, GRSG-116-35-Rev.1 and GRSG-116-39

38. The expert from OICA recalled the purpose of ECE/TRANS/WP.29/GRSG/2018/2 and informed GRSG that parts of the proposal had been adopted and that the remaining parts had recently been reviewed by TF on gas-fuelled vehicle regulations. The expert from Germany reported on the good TF work progress force. He presented GRSG-116-05 on the outcome of TF discussions on UN Regulation No. 67. The expert from LG Europe proposed to remove the requirements for the use of an odorant in n-pentane: such requirements were not necessary and not requested in any test in the UN Regulations or in international standards (GRSG-116-39). After discussion, GRSG agreed on the revised proposal GRSG-116-05-Rev.1 and adopted ECE/TRANS/WP.29/GRSG/2018/2 as reproduced in Annex III to this report. The secretariat was requested to submit the revised proposal to WP.29 and AC.1 as draft Supplement 2 to the 02 series of amendments to UN Regulation No. 67 for consideration at their November 2019 sessions.

39. As a follow-up to ECE/TRANS/WP.29/GRSG/2017/22 tabled at a previous session of GRSG, the expert from Turkey presented a revised proposal (GRSG-116-35) for amendments to insert new provisions on the location on the vehicle of the filling unit. Some experts welcomed the proposal in principle but preferred to clarify the amendments. Finally, GRSG agreed on GRSG-116-35-Rev.1 and adopted ECE/TRANS/WP.29/GRSG/2017/22 as reproduced in Annex IV to this report. The secretariat was requested to submit the proposal as amended to WP.29 and AC.1 as a new draft 03 series of amendments to UN Regulation No. 67 for consideration at their November 2019 sessions.

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

*Documentation:* Informal documents GRSG-116-16, GRSG-116-17, GRSG-116-18 and GRSG-116-21

40. The expert from NGV Global introduced GRSG-116-21 to amend Annex 3A of the Regulation on the design criteria and specifications for Compressed Natural Gas (CNG) cylinders with composite materials in line with standard ISO 11439. The proposal received general support. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-116-21 with an official symbol.

41. The expert from NGV Global presented GRSG-116-16 on issues associated with periodical technical inspection (PTI) and periodic requalification of CNG cylinders. The experts from Germany and United Kingdom raised concerns that PTI specifications should not be part of UN Regulation No. 110 but should be covered by the provisions of the 1997 Agreement. The Chair clarified that only a small number contracting parties to the 1958 Agreement also adhere to the 1997 Agreement (in total, thirteen contracting parties). He added that the new requirements proposed by NGV Global were mainly on inserting design requirements to ease PTI of CNG vehicles in service. GRSG agreed to defer discussion on this subject to its next session. The Chair invited all interested experts to send their comments in due time to the NGV Global expert to allow him to prepare a revised proposal for consideration at that session as an official document.

42. The expert from Italy presented GRSG-116-18 showing the benefits and construction principles of conformable storage concepts for future CNG vehicles. He introduced GRSG-116-17 that proposes to amend UN Regulation No. 110 to allow such storage for agricultural and commercial vehicles. GRSG experts welcomed the initiative of Italy. The Chair invited all interested stakeholders to send their comments in due time to the expert from Italy. GRSG agreed to resume consideration of this subject at its next session based on a revised proposal by Italy, to be circulated as an official document.

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

43. The expert from France informed GRSG that the proposal to improve the performance level of lateral protection devices for a better protection of vulnerable road users was in progress and that more time was needed for investigations. GRSG agreed to remove, in the meantime, the item from the agenda of the next session.

## **XII. UN Regulation No. 93 (Front underrun protection) (agenda item 11)**

*Documentation:* Informal documents GRSG-115-25 and GRSG-116-41

44. Recalling the purpose of GRSG-115-25 presented at the previous GRSG session, the expert from EC proposed to update the provisions on frontal underrun protection to be approved as integrated part of the vehicle, and in particular, to allow more a rounded shape of cabs for better aerodynamic performance (GRSG-116-41). The proposal received general support from GRSG. The expert from OICA offered to send her contributions to the expert from EC. GRSG agreed to resume consideration of this subject at the next session on the basis of an official document.

## **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/2018/25  
 ECE/TRANS/WP.29/GRSG/2019/7  
 Informal documents GRSG-116-06-Rev.1, GRSG-116-07, GRSG-116-08, GRSG-116-09-Rev.1 and GRSG-116-40-Rev.1

45. The expert from OICA presented GRSG-116-40-Rev.1 on the historical highlights and progress of the splitting of UN Regulation No. 116 (GRSG-116-09-Rev.1). She reported on the status of ECE/TRANS/WP.29/GRSG/2017/23, ECE/TRANS/WP.29/GRSG/2017/24/ Rev.1, ECE/TRANS/WP.29/GRSG/2017/25 and its Corr.1, as reflected in GRSG-116-06-Rev.1, GRSG-116-07 and GRSG-116-08. She invited all interested experts to send her their final comments not later than by the end of May 2019 to allow her to set up a TF to review the proposals and to prepare, in due time, the final versions of the draft official documents for submission to the secretariat. She added that the provisions of Annex 5 on ElectroMagnetic Compatibility (EMC) should be scrutinized by the Working Party on Lighting and Light-Signalling (GRE), particularly by its TF on EMC.

46. GRSG endorsed the request. The Chair announced that he would inform the GRE Chair in the near future, and WP.29 at its June 2019 session. GRSG agreed to resume discussions at its next session based on official documents.

47. The expert from OICA presented ECE/TRANS/WP.29/GRSG/2018/25 to clarify the environmental testing requirements for keys. GRSG adopted the document and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 7 to UN Regulation No. 116 for consideration at their November 2019 sessions.

48. The expert from OICA introduced ECE/TRANS/WP.29/GRSG/2019/7 to amend the definition of keys that take account of innovative vehicle alarms systems, such as silent alarm or door-unlocking using smart phone. She underlined the need to distinguish between a key as an electronic solution and as hardware/software used to transfer this electronic solution. Several experts raised concerns on security issues of already existing keys and locking systems. GRSG agreed on the urgent need to work on cybersecurity issues of such new innovative keys for locking/unlocking. The Chair invited all experts to share their thoughts with the expert from OICA and to send her their proposals. GRSG agreed to resume consideration of this subject at its next session based on a revised official document by OICA which took account of the comments received.

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

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

49. The expert from the Republic of Korea recalled the discussion on GRSG-115-14-Rev.1 at the previous session, to add into UN Regulation No. 121 a new symbol for "power on/power off" controls in vehicles equipped with an electric powertrain, such as electric vehicles. He thanked GRSG for the comments received, concluded that the current symbol in the UN Regulation was sufficient and that no further follow-up was necessary.

50. GRSG endorsed the request by OICA to defer discussion on ECE/TRANS/WP.29/GRSG/2018/6 to a further session.

51. GRSG agreed to resume consideration on this item at its next session in October 2019.

## **XV. UN Regulation No. 144 (Accident Emergency Call Systems) (agenda item 14)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2018/23  
Informal documents GRSG-116-10 and GRSG-116-15

52. The expert from OICA recalled that the purpose of ECE/TRANS/WP.29/GRSG/2018/23 was to correct the scope of the UN Regulation. The expert from the Russian Federation proposed further editorial corrections and amendments (GRSG-116-15) which allow contracting parties to apply the relevant requirements to assess compliance of Accident Emergency Call Devices (AECD) designed for installation on vehicles of categories other than M<sub>1</sub> and N<sub>1</sub>. The expert from OICA introduced GRSG-116-10 that clarified the application of an AECD approval and that proposed to continue with a new series of amendments that would give an appropriate lead time for the industry. Both proposals received general support and several comments. The expert from the Russian Federation welcomed the proposed amendments and volunteered to prepare two official documents for GRSG at its next session: (a) a draft supplement with the corrections and clarifications and (b) a draft 01 series of amendments with the broader scope and the transitional provisions.

53. GRSG welcomed that offer and agreed to resume consideration of this subject at its next session based on a revised, official documents by the Russian Federation.

## **XVI. UN Regulation No. 0 (International Whole Vehicle Type Approval) (agenda item 15)**

*Documentation:* Informal documents WP.29-176-21 and GRSG-116-47

54. GRSG noted that WP.29 and AC.1 had adopted at their March 2019 session: (a) the draft 01 series of amendments to UN Regulation No. 0 (ECE/TRANS/WP.29/2018/82) as well as (b) the draft amendment to Schedule 4 of the 1958 Agreement on the numbering of type approvals (ECE/TRANS/WP.29/2018/165).

55. GRSG also noted the discussion at the recent WP.29 session on the road map for Phase 2 (2018–2022) of the International Whole Vehicle Type Approval (IWVTA). As requested by WP.29, GRSG considered the proposed candidate items for technical regulations applicable to that phase (WP.29-176-21). GRSG agreed with the prioritization of the candidate items as reflected in GRSG-116-47. The secretariat was requested to transmit GRSG-116-47 to IWG on IWVTA for consideration at its forthcoming meeting in June 2019.

## **XVII. Consolidated Resolution on the construction of vehicles (R.E.3) (agenda item 16)**

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/8

56. Recalling the discussion at the previous session of GRSG, the expert from IMMA introduced ECE/TRANS/WP.29/GRSG/2019/8 to amend the provisions of R.E.3 to allow the application of "twin wheels" on all vehicles of category L. GRSG noted general support and adopted the document. The secretariat was requested to submit ECE/TRANS/WP.29/GRSG/2019/8 to WP.29 as an amendment to the Consolidated Resolution on the Construction of Vehicles for consideration at its November 2019 session.

57. The expert from IMMA volunteered to check if a parallel amendment to the Special Resolution No. 1 (S.R.1) under the 1998 Agreement was necessary and offered to keep GRSG informed.

## **XVIII. Event data recorder (agenda item 17)**

*Documentation:* ECE/TRANS/WP.29/2019/2  
Informal documents WP.29-177-19, GRSG-116-42 and GRSG-116-43-Rev.1

58. GRSG noted ECE/TRANS/WP.29/2019/2 and WP.29-177-19 on the work priorities of WP.29 and AC.3 on automated/connected vehicles and their decision that GRSG should resume its work on developing a new UN Global Technical Regulation (UN GTR) on Event Data Recorder (EDR).

59. The expert from OICA presented GRSG-116-42 on the position of the automotive industry to support developing this a new UN regulation on EDR and, in parallel, a Data Storage System for Automated Driving vehicles (DSSAD). She added that discussions on DSSAD had already taken place at the Working Party on Automated/Autonomous and Connected Vehicles (GRVA), particularly in its IWG on Automatically Commanded Steering Functions (ACSF). She concluded that the functions of both systems, EDR and DSSAD, were different but the hardware could be the same and, therefore, should be developed in parallel. The experts from Germany and CLEPA endorsed that position and underlined the urgency to work on these subjects.

60. The expert from the Netherlands suggested establishing an informal working group under GRSG and GRVA to develop draft regulatory proposals for new UN regulations on EDR for conventional and automated/autonomous vehicles, and on DSSAD. The experts from China and Japan welcomed that initiative and offered to contribute to the activities. GRSG agreed on the need to establish an IWG on EDR/DSSAD (possibly under GRSG and GRVA).

61. The expert from the Netherlands introduced GRSG-116-43 (tabled jointly by the experts from Japan and the Netherlands) which proposed a first draft of the terms of reference and rules of procedure for the new IWG on EDR/DSSAD. GRSG considered the document in detail and noted some amendments to the proposal, given in GRSG-116-43-Rev.1. GRSG also noted several concerns on the feasibility of the tasks within the timeline as stipulated in paragraphs 6 and 7 of the proposal. GRSG requested the secretariat to transmit GRSG-116-43-Rev.1 to GRVA for further consideration at its special June 2019 session.

62. Following the intervention of some delegations on the urgency of these new activities, GRSG agreed to proceed, in the meantime, on the basis of a TF on EDR.

63. GRSG agreed to resume consideration of this subject at its next session in October 2019 based on the outcome of TF meetings. The Chair announced that he would inform the World Forum WP.29, the Coordination Committee AC.2 and the Executive Committee AC.3 at their forthcoming sessions in June 2019.

## **XIX. Exchange of views on Vehicle Automation (agenda item 18)**

*Documentation:* Informal documents GRSG-116-45 and GRSG-116-46

64. GRSG noted the information by the secretariat on the activities and priorities of WP.29 on automated and autonomous vehicles (GRSG-116-45), which supplements the

information received under agenda item 17 (see paragraph 58 above). The expert from OICA reported on the status of work, the timeline for related activities and the challenges faced by GRVA on automated vehicles (GRSG-116-46).

65. Following a question from the expert of the United Kingdom, GRSG noted that WP.29/AC.2 would ensure the coordination of all activities related to vehicle automation between its subsidiary bodies (e.g. GRSG and GRVA) and that the Inland Transport Committee recently set up a WP.1–WP.29 Executive Task Force (ETF) to coordinate the related actions between the World Forum WP.29 and the Global Forum for Road Traffic Safety (WP.1).

66. GRSG agreed to resume consideration of this subject at its next session based on a list of UN Regulations under the responsibility of GRSG that focus on the vehicle driver. Thus, the expert from OICA volunteered to prepare this list.

## **XX. Other business (agenda item 19)**

*Documentation:* Informal document GRSG-116-23

67. The expert from the Netherlands invited interested experts to attend the twenty-sixth international technical conference on the Enhanced Safety of Vehicles (ESV), to be held in Eindhoven (Netherlands) from 10 to 13 June 2019, in cooperation with the United States Department of Transportation, National Highway Traffic Safety Administration (NHTSA).

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

*Documentation:* ECE/TRANS/WP.29/GRSG/2019/14  
Informal documents GRSG-116-02, GRSG-116-28 and GRSG-116-29

68. The expert from Finland introduced ECE/TRANS/WP.29/GRSG/2019/14 proposing amendments to UN Regulation No. 58 to clarify the requirements on the installation on vehicles of rear underrun protection devices. The expert from the Netherlands endorsed the proposal by Finland and withdrew GRSG-116-02 with similar amendments.

69. GRSG adopted ECE/TRANS/WP.29/GRSG/2019/14 and requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 1 to the 03 series of amendments to UN Regulation No. 58 for consideration at their November 2019 sessions.

70. The expert from OICA presented GRSG-116-29 on the possible installation of aerodynamic devices on commercial vehicles cabs to improve aerodynamic performance. She introduced GRSG-116-28 that amends the provisions of UN Regulation No. 58 to allow installing such aerodynamic devices at the rear end of vehicles. She added that the provisions of new Annex 8 should ensure that aerodynamic devices shall not compromise the functionality of rear underrun protection devices. GRSG noted general support for the proposal. The expert from Canada informed GRSG that the installation of such aerodynamic devices had been allowed in his country since 2013 and announced that he would share a study by his Government on this subject at the next GRSG session. The expert from Sweden was of the opinion that new Schedule 8 of the 1958 Agreement would allow virtual testing methods for such aerodynamic devices. The expert from Japan preferred to add a clarification that aerodynamic devices should be omitted when measuring the dimensions (e.g. length) of the vehicle. The expert from EC proposed to proceed with the proposal as a Supplement to the UN Regulation as the new requirements were not mandatory and only considered as optional "if fitted" requirements.

71. GRSG agreed to resume consideration of this subject at its next session based on a revised proposal by OICA to be circulated, if available, as an official document.

## **B. UN Regulation No. 62 (Anti-theft for mopeds/motorcycles)**

*Documentation:* Informal document GRSG-116-13

72. The expert from France introduced GRSG-116-13 to insert specifications in UN Regulation No. 62 that would ensure the electromagnetic compatibility of an electronic device, such as a transponder. Thus, he proposed to insert a new paragraph 5.12 with a reference to UN Regulation No. 10. GRSG supported the proposal. The expert from EC volunteered to check the proposal for the immunity and emission test methods of the 06 series of amendments to UN Regulation No. 10.

73. GRSG agreed to resume discussions at its next session based on a revised proposal by EC to be circulated, if available, as an official document.

## **C. UN Regulation No. 122 (Heating systems)**

*Documentation:* Informal document GRSG-116-22

74. The expert from CLEPA presented GRSG-116-22 to add a missing reference to the existing note 2 and to clarify the application of Annex 4 for heat pumps. The expert from France raised a study reservation. GRSG agreed to resume consideration of this subject at its next session and requested the secretariat to circulate GRSG-116-22 with an official symbol.

## **XXI. Provisional agenda for the 117th session**

75. The following provisional agenda was adopted for the 117th session of GRSG, scheduled to be held in Geneva from 8 (9.30 a.m.) to 11 October (12.30 p.m.) 2019:<sup>1</sup>

1. Adoption of the agenda.
2. Amendments to regulations on buses and coaches:
  - (a) UN Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> 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.

<sup>1</sup> GRSG noted that the deadline for submission of official documents to the ECE secretariat was 12 July 2019, twelve weeks prior to the session.

8. UN Regulation No. 55 (Mechanical couplings).
9. UN Regulation No. 58 (Rear underrun protective devices).
10. UN Regulation No. 62 (Anti-theft (mopeds/motorcycles)).
11. Amendments to gas-fuelled vehicle regulations:
  - (a) UN Regulation No. 67 (LPG vehicles);
  - (b) UN Regulation No. 110 (CNG and LNG vehicles).
12. UN Regulation No. 93 (Front underrun protection).
13. UN Regulation No. 116 (Anti-theft and alarm systems).
14. UN Regulation No. 121 (Identification of controls, tell-tales and indicators).
15. UN Regulation No. 122 (Heating systems).
16. UN Regulation No. 144 (Accident Emergency Call Systems).
17. UN Regulation No. 0 (International Whole Vehicle Type Approval).
18. Consolidated Resolution on the Construction of Vehicles.
19. Event Data Recorder.
20. Exchange of views on Vehicle Automation.
21. Election of officers.
22. Other business.



## Annex I

[English only]

**List of informal documents considered during the session****List of informal documents (GRSG-116-...) distributed during the session**

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(GRSG Chair) Running order of the 116th session of GRSG (1 – 5 April 2019)	(f)
2	(The Netherlands) Proposal for amendments to UN Regulation No. 58.03 (Rear Underrun Protection Device)	(f)
3	(Secretariat) ISO 17386:2010 Transport information and control systems - Manoeuvring aids for low speed operation (MALSO) - Performance requirements and test procedures	(f)
4	(Germany) UN Regulation No. 46 (Devices for indirect vision and motor vehicles with regard to the installation of these devices)	(f)
5-Rev.1	(Germany) Proposal for Supplement 1 to the 02 series of amendments of UN Regulation No. 67	(b)
6-Rev.1	(OICA) UN Regulation No. 116: Uniform provisions concerning the protection of motor vehicles against unauthorized use and the approval of the device against unauthorized use (by mean of a locking system)	(c)
7	(OICA) New UN Regulation on uniform technical prescriptions concerning approval of immobilizers and approval of a vehicle with regard to its immobilizer	(c)
8	(OICA) Draft UN Regulation on uniform provisions concerning approval of vehicle alarm systems and approval of a vehicle with regard to its vehicle alarm system	(c)
9-Rev.1	(OICA) Highlights on the splitting of UN Regulation No. 116	(f)
10	(OICA) DRAFT Proposal for a new series of amendments to UN Regulation No. 144 (Accident Emergency Call Systems)	(c)
11	(France) Behaviour of M2 and M3 general construction in case of Fire Event (BMFE)	(f)
12	(France) Terms of Reference and Rules of Procedure of the GRSG informal working group on the Behaviour of M2 and M3 vehicles' general construction in case of Fire Event (BMFE)	(a)
13	(France) Suggestion for an amendment to UN Regulation No. 62 (Anti-theft for mopeds/motorcycles)	(c)
14	GRB Status Report on the task force on reverse warning issues	(f)
15	(Russian Federation) Draft proposal for amendments to UN Regulation No. 144 (Accident Emergency Call Systems)	(c)
16	(NGV Global) Proposal for amendments to the 04 series of amendments to UN Regulation No. 110 (CNG and LNG vehicles)	(c)
17	(Italy) Proposal for amendments to UN Regulation No. 110 (CNG/LNG vehicles)	(c)
18	(Italy) Conformable storage concept for CNG vehicles	(f)
19	Highlights of the recent WP.29 sessions and general information	(f)
20	(Germany) Proposal for amendments to UN Regulation No. 46	(c)
21	(NGV Global) Proposal for amendments to UN Regulation No. 110	(c)
22	(CLEPA) Proposal for amendments to UN Regulation No. 122 (Heating systems)	(c)
23	(The Netherlands) 26th International Technical Conference on the Enhanced Safety of Vehicles (ESV)	(f)

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
24	(OICA) Proposal for Supplement 7 to the 06 series of amendments, Supplement 2 to the 07 series of amendments and Supplement X to the 08 series of amendments to UN Regulation No. 107	(c)
25	(OICA) Specific issues for M2-buses of Class B with the transition from 05-series of UN Regulation No. 107 to 06-series of amendments	(f)
26-Rev.1	(OICA) Proposal for the 01 series of amendments to UN Regulation No. 35 (Foot controls)	(b)
27-Rev.1	(OICA) Revised proposal for amendments to UN Regulation No. 46 (Devices for indirect vision)	(c)
28	(OICA) Proposal for a Supplement to the 03 series of amendments to UN Regulation No. 58	(c)
29	(OICA) Aerodynamic devices	(f)
30	(Republic of Korea) Proposal for amendments to GTR No. 6	(c)
31	(Republic of Korea) Proposal for GTR No. 6 (Safety glazing)	(f)
32	(Republic of Korea) Progress report by PSG IWG	(f)
33	UN Regulation No. 55: Examples of mechanical coupling devices of class A	(c)
34	(CLEPA) Comments on ECE/TRANS/WP.29/GRSG/2019/11 UN Regulation No. 26 (External projection for passenger cars)	(f)
35-Rev.1	(Turkey) Proposal for the 03 series of amendments to UN Regulation No. 67 (LPG vehicles)	(b)
36	(VRU-Proxi) Proposal for a new UN Regulation on uniform provisions concerning the approval of devices for reversing motion and motor vehicles with regard to the driver's awareness of vulnerable road users behind vehicles	(c)
37	(Germany) UN Regulation No. 46: Default view and temporary modified view	(f)
38	(VRU-Proxi) Revised Terms of Reference and Rules of Procedure of the GRSG informal working group on awareness of Vulnerable Road Users proximity in low speed manoeuvres (VRU-Proxi)	(a)
39	(LG Europe) Proposal for Supplement 1 to the 02 series of amendments to UN Regulation No. 67	(b)
40-Rev.1	(OICA) UN Regulation No. 116: OICA's work summary	(f)
41	(EC) Draft amendments to UN Regulation No. 93 (Front Underrun Protection)	(c)
42	(OICA) Event Data Recorder (EDR)	(f)
43-Rev.1	(Japan and The Netherlands) Informal Working Group on EDR/DSSAD: Terms of Reference	(d/e)
44	(Belgium) The mass corresponding to the load on the front axle of articulated buses	(f)
45	(Secretariat) WP.29 and GRVA activities on Automated Vehicles	(f)
46	(OICA) Report on Automated Vehicle activities	(f)
47	(Secretariat) Candidate items for technical regulations applicable to IWVTA Phase 2 (2018 – 2022) considered by GRSG at its April 2019 session	(e)

### 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-115-04	(Norway) Collision protection of the front section on buses	(f)
GRSG-115-14-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)	(f)
GRSG-115-25	(EC) Draft amendments to UN Regulation No. 93 (Front Underrun	(f)

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<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
WP.29-176-21	(India) Request for authorization to develop an amendment to global technical regulation No. 6 (Safety Glazing Protection)	(f)

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*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) Transmitted to GRVA for further consideration.
- (e) Transmitted to IWVTA for further consideration.
- (f) Consideration completed or to be superseded.

## Annex II

### **Draft 01 series of amendments to UN Regulation No. 35 (Foot controls) (para. 18)**

*Paragraph 4.2.*, amend to read:

- "4.2. An approval number shall be assigned to each type approved. Its first two digits (at present **01**) shall indicate the series of amendments incorporating the most recent major technical amendments made to the UN Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another vehicle type."

*Paragraph 5.7.*, amend to read:

- "5.7. The distances, respectively shown as "H" and "J" in Annex 4, between the projection of the service-brake pedal on to the reference plane "P" and the intersection of each of the walls with that plane shall be  $\geq 130$  mm to the right and  $\geq 160$  mm to the left for vehicles with three pedals, and  $\geq 130$  mm to the right and  $\geq 120$  mm to the left for vehicles with two pedals.

**In the case of a foot rest as declared by the manufacturer, installed for the driver's left foot, the measurements for "J" and "G" in Annex 4 shall ignore the foot rest.**

**The distance between the foot rest and the left most pedal shall be at least 50 mm between the two vertical planes passing through the edges closest to each other."**

*Insert new paragraphs 10. to 10.4.*, to read:

#### **"10. TRANSITIONAL PROVISIONS**

- 10.1. As from the official date of entry into force of the 01 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 01 series of amendments.**
- 10.2. As from 1 September 2020, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September 2020.**
- 10.3. Contracting Parties applying this Regulation shall continue to accept type approvals issued according to the preceding series of amendments to this Regulation first issued before 1 September 2020.**
- 10.4. Contracting Parties applying this Regulation shall not refuse to grant type approvals according to any preceding series of amendments to this Regulation or extensions thereof."**

*Paragraph 10. (former)*, re-number as paragraph 11.

*Annex 1, item 5*, amend to read:

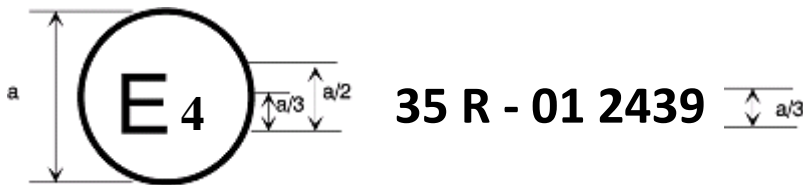
- "5. Brief description of the vehicle type as regards the arrangement of foot controls **and foot rest**....."

*Annex 2*, amend to read:

## "Arrangements of approval marks

### Model A

(See paragraph 4.4. of this Regulation)

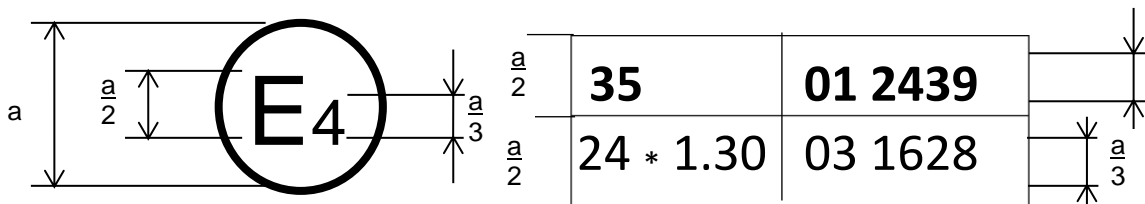


$a = 8 \text{ mm min}$

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to the arrangement of foot controls, been approved in the Netherlands (E4) under approval number **012439**. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of **UN Regulation No. 35, as amended by the 01 series of amendments**.

### Model B

(See paragraph 4.5. of this UN Regulation)



$a = 8 \text{ mm min}$ .

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E4) pursuant to UN Regulation Nos. 35 and 24.<sup>1</sup> (In the case of the latter UN Regulation the corrected absorption co-efficient is  $1.30 \text{ m}^{-1}$ ). **The first two digits of the approval numbers indicate that, at the date on which the respective approvals were granted, UN Regulation No. 35 included the 01 series of amendments and UN Regulation No. 24 included the 03 series of amendments.**

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

## Annex III

## Draft Supplement 2 to the 02 series of amendments to UN Regulation No. 67 (LPG vehicles) (para. 38)

Add a new paragraph 11.6. (transitional provisions), to read:

"11.6. As from 1 September 2022, Contracting Parties applying this Regulation may refuse the sale of a type of component which does not meet the requirements of the 02 series of amendments to this Regulation, unless the component is intended as a replacement for fitting on vehicles in use."

Annex 3

Paragraph 3., amend to read:

"3. Pressure relief valve (discharge valve) **and components connecting the pressure relief valve with the gaseous phase inside the LPG container**"

Paragraph 3.6., amend to read (inserting also a reference to existing footnote \*\*):

"3.6. Applicable test procedures:

Overpressure test	Annex 15, para. 4.
...	
Temperature cycle	Annex 15, para. 16.**
<b>Test on non-metallic material inside a container</b>	<b>Annex 15, para. 18.**</b>

Paragraph 7., amend to read:

"7. Provisions regarding the approval of the pressure relief device (fuse) **and components connecting the pressure relief device with the gaseous phase inside the LPG container**

Paragraph 7.6., amend to read (inserting also a new reference to existing footnote \*\*):

"7.6. Test procedures to be applied:

Overpressure test	Annex 15, para. 4.
...	
Temperature cycles	Annex 15, para. 16.**
<b>Test on non-metallic material inside a container</b>	<b>Annex 15, para. 18.**</b>

Annex 15, insert new paragraphs 18. to 18.3.2., to read:

"18. **Test on non-metallic material inside a container**

**All components connecting the pressure relief valve and/or the pressure relief device with the gaseous phase in the LPG container shall be tested using the following procedure.**

**The tests shall be carried out on two samples, "a" and "b":**

**Sample "a" shall be aged according to paragraph 18.1.1. or 18.1.2.**

**The aged sample "a" shall undergo the vibration test according to paragraph 18.2.**

**The virgin sample "b" shall be used as a reference for the flow test according to paragraph 18.3.**

- 
- 18.1. Ageing tests on sample "a"**
  - 18.1.1. Ageing procedure 1 (component disassembled)**
  - 18.1.1.1. Disassemble, using instructions from the manufacturer, all non-metallic materials from the component in contact with the liquid LPG.**
  - 18.1.1.2. Age the non-metallic materials using the test description of Annex 15, paragraph 11.1.**
  - 18.1.1.3. Check compliance to Annex 15, paragraph 11.2.**
  - 18.1.1.4. Reassemble the aged non-metallic materials to the component using the instructions from the manufacturer.**
  - 18.1.2. Ageing procedure 2 (entire component)**
  - 18.1.2.1. Expose the entire component to n-Pentane according to Annex 15, paragraph 11.1.**
  - 18.1.2.2. Check compliance to Annex 15, paragraph 11.2.**
  - 18.2. Vibration test on aged sample "a"**
  - 18.2.1. Perform on the aged sample the vibration test in Annex 15, paragraph 10.5., procedures A or B. The sample shall comply with the test requirements in Annex 15, paragraph 10.5., procedure A or B.**
  - 18.3. Flow test with dummy tank to compare sample "a" and reference sample "b"**
  - 18.3.1. Perform for both samples the flow test according to paragraph 6.15.8.3. of this Regulation.**
  - 18.3.2. Requirements:**
    - Both aged and non-aged samples "a" and "b" shall comply with the flow requirements as per paragraph 6.15.8.3. of this Regulation.**
    - The non-metallic material of the samples "a" and "b" shall show no cracks, deformation or any visual damage."**

## Annex IV

### **Draft 03 series of amendments to UN Regulation No. 67 (LPG vehicles) (para. 39)**

*Paragraph 5.2.*, replace the text in brackets by "(at present 03 corresponding to the 03 series of amendments)".

*Insert a new paragraph 6.15.10.8.*, to read:

**"6.15.10.8. For vehicles of category M<sub>1</sub>, the filling unit shall not be located below the body of the vehicle and shall respect the height provisions of paragraph 17.4.5."**

*Insert new paragraphs 22.14. to 22.18.*, to read:

**"22.14. As from the official date of entry into force of the 03 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 03 series of amendments.**

**22.15. As from 1 September 2021, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September 2021.**

**22.16. Until 1 September 2022, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September 2021.**

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

**22.18. Notwithstanding paragraph 22.15. above, Contracting Parties applying the UN Regulation shall continue to accept UN type-approvals issued according to the preceding series of amendments to the UN Regulation, for the vehicles / vehicle systems / vehicle components which are not affected by the changes introduced by the 03 series of amendments."**

*Throughout Annexes 2A and 2C (Model A and Model B), replace the figure "02" by "03" (9 times).*



## Annex V

## GRSG informal working groups

<i>Informal working group</i>	<i>Chair</i>	<i>Secretary</i>
Panoramic Sunroof Glazing (PSG)	Mr. S. B. Eom (Republic of Korea) (co-chaired by Mr. Th. Fuhrmann-Baecker (Germany)) Tel: +82 31 3690217 email: sbeom@ts2020.kr	Mr. S. Müller von Kralik (CLEPA) Tel: +49 89 85794 1625 email: Bianca.Rehr@webasto.com
Awareness of Vulnerable Road Users proximity (VRU-Proxi)	Mr. Y. Matsui (Japan) (Chair) Mr. P. Broertjes (EC) (Vice-Chair) Tel: +81 422 41 3371 email: ymatsui@ntsel.go.jp Tel: +32 2 299 49 33 email: peter.broertjes@ec.europa.eu	Mr. Johan Broeders (OICA) Tel: ++31 40 214 5033 email: johan.broeders@daftrucks.com
Behaviour of M <sub>2</sub> and M <sub>3</sub> vehicles' general construction in case of Fire Event (BMFE)	Mr. F. Herveleu (France) (Chair) Tel: +33 1 69 803407 email: fabrice.herveleu@utacceram.com	Mr. O. Fontaine (OICA) Tel: +33 1 43590013 email: ofontaine@oica.net
Event Data Recorder and Data Storage System for Automated Driving (EDR/DSSAD)	(to be defined)	(to be defined)