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**World Forum for Harmonization of Vehicle Regulations****Working Party on General Safety Provisions****103<sup>rd</sup> session**

Geneva, 2–5 October 2012

Item 2(a) of the provisional agenda

**Regulation No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles) - Proposals for further amendments****Proposal for draft 06 series of amendments to Regulation  
No. 107 (M<sub>2</sub> and M<sub>3</sub> vehicles)****Submitted by the Informal group on Service Doors, Windows and  
Emergency Exits\***

The text reproduced below was prepared by the Informal group on Service Doors, Windows and Emergency Exits (SDWEE) on new provisions to add a film on the glazing of emergency exits. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## I. Proposal

Insert new paragraphs 2.41. to 2.43., to read:

- "2.41.            "Overnight locking system" means a system designed to provide the possibility to secure the service and emergency doors of the vehicle against opening.**
- 2.42.            "Emergency lighting system" means a system that provides a minimum level of lighting necessary to enable occupants to safely egress from the vehicle, including the emergency exits.**
- 2.43.            "Safety sign" means a configuration of visual elements intended to convey a safety-related message."**

Insert new paragraphs 10.24. to 10.26., to read:

- "10.24.           As from the official date of entry into force of the 06 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type-approvals under this Regulation as amended by the 06 series of amendments.**
- 10.25.           As from 48 months after the date of entry into force of the 06 series of amendments, Contracting Parties applying this Regulation shall grant type-approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 06 series of amendments.**
- 10.26.           Contracting Parties applying this Regulation shall not refuse to grant extensions of type-approvals for existing types which have been issued according to the 05 series of amendments to this Regulation.**
- 10.27.           As from 60 months after the date of entry into force of the 06 series of amendments to this Regulation, Contracting Parties applying this Regulation shall not be obliged to accept, for the purpose of national or regional type-approval, a vehicle type-approved to the 05 series of amendments to this Regulation."**

Annex 3, paragraph 7.6.1.1., amend to read:

- "7.6.1.1.           The minimum number of doors in a vehicle shall be two, either two service doors or one service door and one emergency door. Every double-deck vehicle shall have two doors on the lower deck (see also paragraph ~~7.6.2.2.~~ 7.6.2.3.). The minimum number of service doors required is as follows:**

Number of passengers	Number <del>Minimum number</del> of service doors		
	Class I & A	Class II	Class III & B
9 - 45	1	1	1
46 - 70	2	1	1
71 - 100	3		
	(2 in the case of a double-deck vehicle)	2	1
> 100	4	3	1

Annex 3, paragraphs 7.6.1.3. and 7.6.1.4., amend to read:

- "7.6.1.3. For the purpose of this requirement, service doors equipped with a power-operated control system shall not be deemed to be emergency doors unless they can be readily opened by hand, once the control prescribed in paragraph 7.6.5.1. has been actuated, if necessary.
- 7.6.1.4. The minimum number of emergency exits shall be such that the total number of exits in a separate compartment is as follows:

<i>Number of passengers and crew to be accommodated in each compartment or deck</i>	<i>Minimum total number of exits</i>
1 - 8	2
9 - 16	3
17 - 30	4
31 - 45	5
46 - 60	6
61 - 75	7
76 - 90	8
91 - 110	9
111 - 130	10
>130	11

The number of exits for each separate deck (in the case of a double-deck vehicle) and each separate compartment must be determined separately. Toilet compartments or galleys are not considered to be separate compartments for the purposes of defining the number of emergency exits. Escape hatches can only count as one of the above-mentioned number of emergency exits."

Annex 3, paragraphs 7.6.1.7. to 7.6.1.7.3., amend to read:

- "7.6.1.7. If the driver's compartment does not provide access to ~~the~~ a passenger compartment by means of a passageway **that permits: complying with one of the conditions described in paragraph 7.7.5.1.1**

- (a) **the front edge of the cylindrical gauge referred to in paragraph 7.7.5.1. to reach at least the transverse vertical plane tangential to the foremost point of the driver's seat back in its rearmost longitudinal position, and**
- (b) **from this plane, to move the panel shown in Annex 4, figure 7 forwards from the contact position, with the cylindrical gauge until it reaches at least the vertical plane tangential to the foremost point of the driver's seat cushion,**

**then** the following requirements ~~conditions~~ shall be met:

- 7.6.1.7.1. The driver's compartment shall have two exits, which shall not both be in the same lateral wall. When one of the exits is a window, **this window** ~~it shall comply with the requirements set out in paragraphs 7.6.3.1. and 7.6.8.~~ **have a minimum area of 400,000 mm<sup>2</sup>, it shall be possible to inscribe in this area a rectangle measuring 500 mm x 700 mm and it shall comply with the requirements set out in paragraph 7.6.8.** for emergency windows.

- 7.6.1.7.2. One or two seats are permitted alongside the driver for additional people, in which case both of the exits referred to in paragraph 7.6.1.7.1. shall be doors.

The driver's door shall be accepted as the emergency door for the occupants of those seats, provided that it is possible to move a test gauge from the occupants' seats to the exterior of the vehicle through the driver's door (see Annex 4, figure 27).

Verification of the access to the driver's door shall be subject to the requirements of paragraph 7.7.3.2., by using the test gauge having a dimension of 600 x 400 mm, as described in paragraph 7.7.3.3.

The **service** door ~~provided for the passengers~~ shall be in the side of the vehicle opposite to that containing the driver's door and shall be accepted as the emergency door for the driver.

~~Up to five additional seats may be fitted in a compartment incorporating the driver's compartment, provided that the additional seats and the space for these seats comply with all requirements of this Regulation and at least one door giving access to the passenger compartment complies with the requirements of paragraph 7.6.3. for emergency doors.~~

- 7.6.1.7.3. ~~In the circumstances described in paragraphs 7.6.1.7.1. and 7.6.1.7.2., the exits provided for the driver's compartment shall not count as one of the doors required by paragraphs 7.6.1.1. to 7.6.1.2., nor as one of the exits required by paragraph 7.6.1.4., except in the case mentioned in paragraphs 7.6.1.7.1. and 7.6.1.7.2. Paragraphs from 7.6.3. to 7.6.7., 7.7.1., 7.7.2. and 7.7.7. shall not apply to such exits. Paragraphs 7.6.3. to 7.6.7., 7.7.1., 7.7.2. and 7.7.7. shall not apply to the exits provided for the driver's compartment as referred to in paragraphs 7.6.1.7.1. and 7.6.1.7.2."~~

*Annex 3, insert new paragraphs 7.6.1.7.4. and 7.6.1.7.5., to read:*

- "7.6.1.7.4. In the circumstances described in paragraphs 7.6.1.7.1. and 7.6.1.7.2., the exits provided in the driver's compartment, and for the occupants of any seats alongside the driver shall not count as one of the doors required by paragraphs 7.6.1.1. to 7.6.1.2., nor as one of the emergency exits required by paragraph 7.6.1.4. for any other passenger compartment.**

- 7.6.1.7.5. Up to five additional seats may be fitted in a compartment incorporating the driver's compartment and any seats alongside the driver, provided that the additional seats and the space for these seats comply with all requirements of this Regulation and at least one of the emergency exits required by paragraph 7.6.1.4. is a door giving access to the passenger compartment complying with the requirements of paragraph 7.6.3.1.2. for emergency doors."**

*Annex 3, paragraphs 7.6.1.8. to 7.6.1.9.3., amend to read:*

- "7.6.1.8. If the driver's compartment is accessible from a passenger compartment by means of a passageway complying with the requirements of parts (a) and (b) of paragraph 7.6.1.7., and any seats adjacent to ~~it~~ this driver's compartment, are accessible from ~~the main~~ that same passenger compartment by means of a passageway complying with one of the conditions described in paragraph 7.7.5.1.1., no external exit is required from the driver's compartment.**

- 7.6.1.9. If, ~~a driver's door or other exit from the compartment is provided in the circumstances described in paragraph 7.6.1.8. it may only count as an exit for passengers provided;~~ under the circumstances described in paragraph 7.6.1.8., a driver's door is provided in vehicles of classes A or B it may ~~only~~ count as an **exit-emergency door** for passengers provided:
- 7.6.1.9.1. ~~it the driver's door~~ satisfies the requirements relating to the dimensions of emergency door indicated in paragraph **7.6.3.1.2.** ~~7.6.3.1.;~~
- 7.6.1.9.2. ~~it the driver's door~~ fulfils the requirements ~~indicated in~~ of paragraph 7.6.1.7.2.;
- 7.6.1.9.3. the space reserved for the driver's seat shall communicate with the main passengers' compartment through an appropriate passage; such requirement shall be deemed to be fulfilled if the test gauge described in paragraph 7.7.5.1. ~~can move~~ **is able to be moved** unobstructed from the gangway, until the front end of the gauge reaches the vertical plane tangential to the foremost point of the driver's seat back (this seat being situated in its rearmost longitudinal position) and, from this plane, the ~~test gauge panel~~ described in paragraph ~~7.6.1.7.2.~~ **7.7.3.3. is able to** ~~could~~ be moved to the emergency door in the direction established by such paragraph (see Annex 4, figure 28) with seat and steering wheel adjustment in their mid-position."

Annex 3, paragraphs 7.6.1.11. and 7.6.1.12., amend to read:

- "7.6.1.11. **Vehicles of Class II, III and B shall be fitted with** ~~E~~escape hatches, additional to the emergency doors and windows. ~~shall be fitted in vehicles of Class II, III and B (In the case of double-deck vehicles, these hatches shall be fitted in the upper deck roof only in the case of double deck vehicles). Except as provided in paragraph 7.6.1.12., they may also be fitted in the case of Class I and A vehicles. There shall not be any escape hatches fitted in the roof of a trolleybus.~~ The minimum number of hatches shall be:

<i>Number of passengers (in the upper deck in the case of double-deck vehicles)</i>	<i>Number Minimum number of hatches</i>
not exceeding <del>50</del> <b>30</b>	1
exceeding <del>50</del> <b>30</b>	2

**Except as provided in paragraph 7.6.1.12., hatches may also be fitted in the case of Class I and A vehicles. There shall not be any escape hatches fitted in the roof of a trolleybus.**

- 7.6.1.12. ~~Vehicles of Class I and A shall not have escape h~~Hatches shall not be fitted in positions where technical components are installed which present possible dangers to passengers using the escape hatches (e.g. high voltage systems, systems containing dangerous liquids and/or gas, etc.). **[This may be verified in accordance with the technical requirements of Regulations Nos. 67, 100 and 110, as applicable]."**

Annex 3, paragraph 7.6.1.14., amend to read:

- "7.6.1.14. All persons accommodated in the lower deck of a double-deck vehicle ~~must~~ **shall**, in an emergency situation, have access to the exterior of the vehicle without having to enter the upper deck."

Annex 3, paragraphs 7.6.1.15.1. and 7.6.1.15.2., amend to read:

- "7.6.1.15.1. ~~two, or~~ at least one and-one-half staircases, shall be provided in **the case of vehicles of Class I and Class II** vehicles if more than 50 passengers are carried on the upper deck;
- 7.6.1.15.2. ~~Two, or~~ at least one and-one-half, staircases ~~are to~~ **shall** be provided in **the case of vehicles of Class II and Class III** vehicles if more than 30 passengers are carried on the upper deck."

Annex 3, insert new paragraphs 7.6.1.17. to 7.6.1.17.2., to read:

- "**7.6.1.17. in the case of vehicles of classes A or B, if there is a door opposite the driver's door it may count as one of the required exits for passengers provided:**
- 7.6.1.17.1. there is not more than one passenger's seat beside the driver's compartment, and**
- 7.6.1.17.2. it complies with the provisions of paragraph 7.6.1.9."**

Annex 3, paragraph 7.6.2., amend to read:

- "7.6.2. ~~Siting~~ **Positioning** of exists
- 7.6.2.1. Vehicles of Classes I, II and III having a capacity exceeding 22 passenger seats shall meet the requirements shown below. Vehicles having a capacity not exceeding 22 passengers may meet either the requirements shown below or those contained in Annex 7, paragraph 1.2."**

Annex 3, paragraphs 7.6.2.1. to 7.6.2.1.3., renumber as paragraphs 7.6.2.1.1. to 7.6.2.1.1.3. and amend to read:

- "7.6.2.1.1. The service door(s) shall be situated on the side of the vehicle that is nearer to the side of the road corresponding to the direction of traffic **for which the vehicle is designed and as declared by the manufacturer in the communication form of Annex 1, Part I, Appendix 1, paragraph 2.8. of this Regulation. in the country in which the vehicle is to be licensed for operation and at** At least one of them shall be in the forward half of the vehicle. This ~~does~~ **shall** not preclude:
  - 7.6.2.1.1.1. the provision of a specially designed door in the rear or side faces of a vehicle for use in place of a service door by wheelchair passengers, or
  - 7.6.2.1.1.2. the provision of an additional ~~service~~ door in the rear face of a vehicle principally for loading/unloading of goods or luggage, but which ~~could~~ **may** be used by passengers where circumstances so require, or
  - 7.6.2.1.1.3. the provision of one or more additional service door(s) on the opposite side of the ~~vehicles~~ **vehicle** in the case of vehicles designed for use in circumstances which require ~~loading/unloading~~ **boarding / alighting of passengers on both sides of the vehicle. Examples of such circumstances include vehicles for airside use at airports, vehicles for use on multimodal transport systems using island platforms, or vehicles which cross borders to countries which do not drive on the same side of the road as the country in which the vehicle is to be licensed for operation. Vehicles so equipped shall be provided with control(s) which that** allow the driver to inhibit normal operation of the doors ~~which that~~ **are not currently in use. or"**

Annex 3, paragraph 7.6.2.1.4., delete.

Annex 3, insert new paragraphs 7.6.2.2. to 7.6.2.2.3., to read:

- "7.6.2.2. **Vehicles of Classes A and B shall meet the following requirements:**
- 7.6.2.2.1. **The service door(s) shall be situated on the side of the vehicle that is nearer to the side of the road corresponding to the direction of the traffic for which the vehicle is designed and as declared by the manufacturer in the communication form of Annex 1, Part I, Appendix 1, paragraph 2.8. of this Regulation.**
- 7.6.2.2.2. **The exits shall be placed in such a way that there is at least one exit on each side of the vehicle.**
- 7.6.2.2.3. **The forward half and the rearward half of the passenger compartment shall each contain at least one exit."**

*Annex 3, paragraphs 7.6.2.2. to 7.6.2.3. (former), renumber as paragraphs 7.6.2.3. to 7.6.2.4.*

*Annex 3, paragraphs 7.6.2.4 to 7.6.2.7. (former), renumber as paragraphs 7.6.2.5 to 7.6.2.8. and amend to read:*

- "7.6.2.5. At least one exit shall be situated either in the rear face or in the front face of the vehicle respectively. ~~For Class I and A vehicles and for vehicles with a rear part permanently closed off from the passenger compartment, this provision is fulfilled if an escape hatch is fitted; or, if paragraph 7.6.1.12. applies, an additional exit to those specified in paragraph 7.6.1., is fitted on each side of the vehicle. For~~ **In the case of** double-deck vehicles, this requirement shall apply only to the upper deck.
- In the case of Class I and A vehicles, this provision is fulfilled if an escape hatch is fitted; or, if paragraph 7.6.1.12. applies, an additional exit to those specified in paragraph 7.6.1., is fitted on each side of the vehicle.**
- 7.6.2.6. The exits on the same side of the vehicle shall be suitably ~~spaced out~~ **separated** along the length of the ~~passenger compartment vehicle.~~
- 7.6.2.7. A door shall, provided that it is not a service door, be permitted in the rear face of the vehicle.
- 7.6.2.8. ~~If Required~~ **Required** escape hatches ~~are fitted, they~~ shall be positioned as follows:
- (a) if there is only one hatch, it shall be situated in the middle third of the passenger compartment; **or**
  - (b) if there are two hatches, they shall be separated by a distance of at least 2 m measured between the nearest edges of the apertures in a line parallel to the longitudinal axis of the vehicle.

*Annex 3, paragraphs 7.6.3.1.1. to 7.6.3.1.3., amend to read:*

- "7.6.3.1.1. ~~A~~ Service doors shall have an aperture creating an access in accordance with the requirements shown in paragraph 7.7.1. of this annex.
- 7.6.3.1.2. ~~An~~ Emergency doors shall have ~~a door an~~ aperture with a minimum height of ~~1,250~~ **1,450** mm and a minimum width of ~~550~~ **600** mm.
- 7.6.3.1.3. ~~An~~ Emergency windows shall have a minimum area of 400,000 mm<sup>2</sup>. It shall be possible to inscribe in this area a rectangle measuring 500 mm x 700 mm."

*Annex 3, paragraph 7.6.3.1.5., amend to read:*

"7.6.3.1.5. ~~An~~ Escape hatches shall have a ~~hatch~~ an aperture with a minimum area of ~~400,000 mm<sup>2</sup>~~ **450,000 mm<sup>2</sup>**. It shall be possible to inscribe in this area a rectangle measuring ~~500 mm~~ **600 mm** x 700 mm. "

*Annex 3, insert new paragraphs 7.6.4.11. to 7.6.4.11.2., to read:*

**"7.6.4.11. If an overnight locking system is provided, the following shall apply:**  
**7.6.4.11.1. the locking system shall have been automatically deactivated when the ignition is in the "ON" position, or**  
**7.6.4.11.2. a warning shall be provided to the driver indicating that the overnight locking system remains in operation at one or more door(s) when the ignition is in the "ON" position. One signal may be used for more than one door."**

*Annex 3, paragraph 7.6.7.2., amend to read:*

"7.6.7.2. Emergency doors, during their use as such, shall not be of the power-operated type unless, once, **either a service door control prescribed in paragraph 7.6.5.1., or a control for a dedicated emergency door complying with the provisions of paragraph 7.6.5.1.** ~~one of the controls prescribed in paragraph 7.6.5.1.~~ has been actuated and returned to its normal position, the doors do not close again until the driver subsequently operates a closing control. Activation of one of the controls ..... "

*Annex 3, insert new paragraphs 7.6.7.7. to 7.6.7.7.2., to read:*

**"7.6.7.7. If an overnight locking system is provided, the following shall apply:**  
**7.6.7.7.1. the locking system shall have been automatically deactivated when the ignition is in the "ON" position, or**  
**7.6.7.7.2. a warning shall be provided to the driver indicating that the overnight locking system remains in operation at one or more door(s) when the ignition is in the "ON" position. One signal may be used for more than one door."**

*Annex 3, insert a new paragraph 7.6.8.7., to read:*

**"7.6.8.7. Any film (e.g. for advertising, anti-vandalism, etc.) laminated to the inside and/or outside of an emergency window shall not prevent or inhibit its functioning as an emergency exit. Proof of the correct functioning shall be demonstrated to the satisfaction of the Technical Service."**

*Annex 3, paragraphs 7.6.11. to 7.6.11.4., should be replaced by new paragraphs 7.6.11. to 7.6.11.7. to read:*

**"7.6.11. Safety signs**  
**7.6.11.1. All safety signs shall comply with requirements contained in paragraph 6.5. of ISO standard 3864-1:2011.**  
**7.6.11.2. Each safety sign required by this Regulation shall be used to communicate only one safety message. The information provided shall be in the form of pictograms, however, words, letters and numbers may supplement the pictogram in combination on the same sign. It shall be located and orientated so as to be easily understood.**



- 7.6.11.2.1. Safety signs shall follow the principles shown in the example layouts below, i.e. a header section depicting the safety message, a second section containing instructional information and a third, optional, footer section for non-critical text.



- 7.6.11.2.2. Pictograms indicating required actions by the user shall show a person, or the relevant part of a person, operating the equipment or device.
- 7.6.11.2.3. Pictograms indicating a required movement shall, where appropriate, show an arrow pointing in the direction of motion. Where a rotational movement is required, a curved arrow shall be used.
- 7.6.11.2.4. Where devices are to be operated, panels removed or doors opened, the pictogram shall indicate the action in progress.

- 7.6.11.2.5. The lower case letter(s) of supplementary words, single letters and numbers shall have a minimum height of 8 mm. Words shall not be in upper case letters only.
- 7.6.11.3. All safety signs that are visible from the inside of the vehicle shall be of photo-luminescent material having luminance decay characteristics conforming, as a minimum, to sub-classification C in Table 2 of ISO standard 17398: 2004, when measured in accordance with paragraph 7.11. of that standard.
- 7.6.11.4. Safety signs shall not be located in positions where they may be obscured during operation of the vehicle. However, a curtain or blind may be positioned over an emergency window provided an additional safety sign indicates that the emergency window is located behind the curtain or blind.
- 7.6.11.5. Each emergency exit, and any other exit that meets the prescriptions for an emergency exit, shall be marked by one of the relevant pictograms described in Table 3 of ISO Standard 7010:2011; pictograms shall be legible from both the inside and the outside of the vehicle.
- 7.6.11.6. Safety signs shall be positioned adjacent to, or surround, or be on, all internal and external emergency controls and device(s) for breaking emergency window(s).
- 7.6.11.7. No part of a safety sign shall obscure any misuse protection that may be present, e.g. a cover."

*Annex 3, paragraph 7.7.3.2., amend to read:*

- "7.7.3.2. The direction of motion of the test gauge shall be in the direction in which a passenger evacuating the vehicle would be expected to move. The test gauge shall be kept perpendicular to that direction of motion.

**In the case of an emergency window in the rear face of the vehicle, intrusion of headrests or other parts of seats shall be allowed provided they can be easily moved out of the way. The main action for moving the components from the escape path shall be in the direction of egress."**

*Annex 3, paragraphs 7.7.4.1. to 7.7.4.1.2., should be deleted.*

*Annex 3, paragraph 7.7.4.2., renumber as paragraph 7.7.4.1.*

*Annex 3, insert new paragraphs 7.8.3. to 7.8.3.10., to read:*

- "7.8.3. ~~Reserved~~ **Vehicles of Classes II, III and B shall be equipped with an emergency lighting system:**
- 7.8.3.1. **It shall be possible for the driver to activate the emergency lighting system from the driver's seating position.**
- 7.8.3.2. **The operation of the emergency control of any service or emergency door shall activate the emergency lighting system.**
- 7.8.3.3. **The emergency lighting system, once activated, shall remain active for at least 30 minutes unless de-activated by the driver.**

- 7.8.3.4. The power supply for the emergency lighting shall be suitably located within the vehicle to minimise the risk of its continued operation being prejudiced as the result of an accident.
- 7.8.3.5. All units providing the emergency lighting shall produce a white light.
- 7.8.3.6. The uniformity of illuminance of the lighting shall be assessed in accordance with the following measures:
- Maximum uniformity of illuminance =  $\frac{\text{Maximum lighting level recorded}}{\text{Average lighting level recorded}}$
- Minimum uniformity of illuminance =  $\frac{\text{Minimum lighting level recorded}}{\text{Average lighting level recorded}}$
- 7.8.3.7. The emergency lighting system shall provide a minimum illuminance of 10 lux directly under each light unit in the passenger compartment at a height of 750 mm above the centreline of all access passages and gangways.
- 7.8.3.8. The uniformity of the illuminance over the length of the passenger compartment at a height of 750 mm above all access passages and gangways shall be between 0.15 and 2.
- 7.8.3.9. The emergency lighting system shall provide a minimum illuminance of 1 lux at floor level in the centreline of all access passages and gangways and at the centre of any step, at step level.
- 7.8.3.10. Conformity with the uniformity requirements shall be demonstrated over a period of at least 30 minutes from initiation of the emergency lighting by measurements taken at distances not exceeding 2 metres."

Annex 4, Figure 20, amend the title to read:

"Testing device for ~~sitting~~ positioning of handholds"

Annex 4, Figure 26, amend to read:

"Reserved"

Annex 7, paragraph 1.1., amend to read:

"1.1. Minimum dimensions for exits

The several kinds of exits shall have the following minimum dimensions:

<i>Aperture</i>	<i>Minimum dimensions</i>	<i>Remarks</i>
Service Door	<i>Entry height:</i>	The service door entry height shall be measured as the vertical distance measured on a vertical plane of the horizontal projections of the mid-point of the door aperture and the top surface of the lowest step.
	Class	
	A 1,650 mm	
	B 1,500 mm	
	<i>Aperture Height</i>	The vertical height of the service door aperture shall be such as to permit the free passage of the dual panel referred to in paragraph 7.7.1.1. of Annex 3. The upper corners may be reduced with round-offs, with a radius of not more than 150 mm.

<i>Aperture</i>	<i>Minimum dimensions</i>	<i>Remarks</i>
	<i>Width:</i> Single door: 650 mm Double door: 1,200 mm	For Class B vehicles where the service door aperture height lies between 1,400 mm and 1,500 mm a minimum single door aperture width of 750 mm shall apply. For all the vehicles the width of any service door may be reduced by 100 mm when the measurement is made at the level of the handholds and by 250 mm in cases where intruding wheel arches or the actuating mechanism for automatic or remote-control doors or the rake of the windscreen so require.
Emergency door	<i>Height:</i> 1,250 mm <i>Width:</i> 550 mm	The width may be reduced to 300 mm in cases where intruding wheel arches so require, providing that the width of 550 mm is respected at the minimum height of 400 mm above the lowest part of the door aperture. The upper corners may be reduced with round-offs, with a radius of not more than 150 mm.
Emergency Window and Escape hatch	<i>Aperture area:</i> 400,000 mm <sup>2</sup>	It shall be possible to inscribe in this area a rectangle of 500 mm x 700 mm.
<b>Escape hatch</b>	<b><i>Aperture area:</i> 450,000 mm<sup>2</sup></b>	<b>It shall be possible to inscribe in this area a rectangle of 600 mm x 700 mm.</b>

"

*Annex 7, paragraphs 1.2. to 1.2.4., should be deleted.*

## II. Justification

Main body of the text:

*Paragraph 2.41.*

Addition of a definition "overnight locking system" including the item in the Regulation, per paragraphs 7.6.4.11. (service doors) and 7.6.7.7. (emergency doors). According to the International Road Union (IRU), centralized overnight unlocking would be appreciated by most European operators in order to facilitate some basic security features. The SDWEE informal group agreed to address this issue as centralized overnight locking system(s) might interfere with the functioning of the emergency exits.

*Paragraph 2.42.*

Addition of a definition "emergency lighting system". The SDWEE informal group agreed adding provisions for emergency lighting system are a practical way to help the occupants of a vehicle reach the exits in case of emergency.

*Paragraph 2.43.*

The informal group found relevant the introduction of new provisions for safety signs in order to improve the level of safety from signage harmonization. The informal group agreed to introduce the provisions relating to the safety signs in a re-written paragraph 7.6.11. (Safety signs).

*Paragraph 10 (transitional provisions)*

The informal group agreed on quite long transitional provisions to enable industry to adjust their production accordingly.

### Annex 3

#### *Paragraph 7.6.1.7.*

None of the conditions described in paragraph 7.7.5.1. are applicable to the driver's compartment. Paragraph 7.7.5.1.1.1. is the most suitable but in most vehicles it is impossible to move the panel forward by 660 mm as the dashboard in front of the driver is usually curved so that the controls are within the driver's reach. The proposal is that the gangway test gauge is moved to coincide with the driver's seat back (as for the forward facing passenger seat and for paragraph 7.6.1.9.3. describing how a driver's door can be used as an exit for passengers) and then the panel is moved to the foremost point of the driver's seat cushion. This would ensure that the driver has sufficient free height and width when accessing or leaving his seat.

#### *Paragraph 7.6.1.7.1.*

The requirements for emergency windows are specified in paragraph 7.6.3.1.3. so greater precise would be achieved by copying the current text of paragraph 7.6.3.1.3. into paragraph 7.6.1.7.1.

#### *Paragraph 7.6.1.7.2.*

The minimum dimensions are applicable to service doors only.

This paragraph is clearer if it only deals with the driver's seat and seats alongside (without a passageway to the passenger's compartment). The requirements for the five additional seats would be transferred into a new paragraph (7.6.1.7.5.).

#### *Paragraph 7.6.1.7.3.*

The last sentence of paragraph 7.6.1.7.2., which helps to define the technical requirements for the exits defined in paragraphs 7.6.1.7.1. and 7.6.1.7.2. should be moved into its own paragraph 7.6.1.7.5.

Having prescribed when and where exits are required, the technical requirements should immediately follow.

#### *Paragraph 7.6.1.7.3. renumbered as 7.6.1.7.4.*

The text of existing paragraph 7.6.1.7.3. is difficult to understand. The intention is that when the driver's compartment and any passenger seats alongside the driver do not have an acceptable passageway to a passenger compartment, then the driver's door and the passengers' door on the opposite side of the vehicle are not accessible to any other passengers and shall not be counted as exits for the passenger compartment occupants. The passenger compartment requires that the number of exits as defined in paragraph 7.6.1. does not count the driver's and front passenger's doors.

#### *New paragraph 7.6.1.7.5.*

Moved from paragraph 7.6.1.7.2. and modified to make it clear that:

- (a) the five additional seats are in addition to any passenger seats alongside the driver;
- (b) as there is no passageway between the front seats (driver's and adjacent passengers') and the five additional seats, these additional seats must be considered as being in a separate compartment with the required number of exits (two), one of which must be an emergency door giving access to the main passenger compartment.

Note: Paragraphs 7.6.1.8. and 7.6.1.9. are specific to vehicles in which there is an acceptable passageway from the driver's and adjacent passengers' seats to the passenger compartment. Paragraph 7.6.1.8. stipulates that in such vehicles an external exit is not required from the driver's compartment, but paragraph 7.6.1.9. indicates that if an exit is

provided it can be counted as an exit for the passengers with no limit on the number of passengers.

*Paragraph 7.6.1.9.*

Clarification that when there is an acceptable passageway between the passengers' compartment and the driver's compartment, the driver's door and/or the front passengers' door can only be used for passengers in vehicles of Class A or B. This possibility came from UN Regulation No. 52 and did not exist in UN Regulation No. 36.

*Paragraph 7.6.1.9.1.*

The requirements for emergency doors are specified in paragraph 7.6.3.1.2. so it is more precise to specify this paragraph rather than paragraph 7.6.3.1., which applies to all exits.

*Paragraph 7.6.1.9.3.*

Paragraph 7.6.1.7.2. refers to a test gauge and not to a panel. The word "can" is more appropriate than "could".

*Paragraph 7.6.1.11.*

The threshold for an additional escape hatch is brought back from 50 to 30 for the sake of improved safety as roof hatches are usually the main emergency exit when the vehicle is on its side. The wording is improved for better clarity.

*Paragraph 7.6.1.12.*

This paragraph was last amended in document ECE/TRANS/WP.29/2011/36. The SDWEE informal group, however, believes that the new safety provisions should not be limited to the vehicles of Class I and A. In addition, some guideline for verification is appreciated by a reference to UN Regulation No. 100. The SDWEE informal group expects some decision from GRSG about this added sentence.

*Paragraphs 7.6.1.15.1. and 7.6.1.15.2.*

The experts in the informal group were keen to improve safety by switching the threshold number of passengers for vehicles of Class II from 50 to 30, in spite of the challenge this represents for some short Class II vehicles.

*Paragraphs 7.6.1.17. to 7.6.1.17.2.*

Clarification of the conditions for the driver's door to be considered as an emergency door for the occupants of the passenger compartment.

*Paragraph 7.6.2.1.*

The informal group agreed to improve the clarity of the text by separating the provisions applying to the vehicles of Classes I, II and III (paragraph 7.6.2.1.) from the provisions applying to the vehicles of Classes A and B (paragraph 7.6.2.2.).

*Paragraph 7.6.2.1.1.*

Editorial improvement

*Paragraph 7.6.2.1.1.2.*

The informal group agreed to extend the allowance of an additional door in the rear face of the vehicle, to door(s) intended for cargo (food, luggage, skis, etc.). This provision is linked to the provision of paragraph 7.6.2.7.

*Paragraph 7.6.2.1.1.3.*

Already in the current text of the Regulation, this paragraph addresses the case of vehicles crossing the Channel or operated in airports. Examples of such circumstances include vehicles for airside use at airports, vehicles for use on multimodal transport systems using island platforms, or vehicles which cross borders to countries which do not drive on the same side of the road as the country in which the vehicle is to be licensed for operation.

*Paragraph 7.6.2.1.4.*

The wording of the current text of the former paragraph 7.6.2.1.4. is transferred to a new paragraph 7.6.2.2.5. addressing the vehicles of Classes A and B.

*Paragraph 7.6.2.2. (new)*

This paragraph and its subparagraphs are the consequence of rearranging the provisions as explained above (see justification to paragraph 7.6.2.1.) The proposed wording is based on the second part of the former paragraph 7.6.2.

*Paragraphs 7.6.2.2.1. to 7.6.2.2.3.*

These provisions are taken from the former paragraph 1.2. of Annex 7.

Paragraph 7.6.2.2.3.: replaces "passenger space" (paragraph 1.2.3. of current Annex 7) with "passenger compartment".

*Paragraph 7.6.2.5. (new)*

- (a) The informal group agreed that a suitable solution does not currently exist for the lower deck of double deck vehicles.
- (b) Class I single deck vehicles and Class A vehicles are not expected to roll over, hence do not need any roof hatch.
- (c) According to paragraph 7.6.1.12., vehicles of Class I and A shall not have escape hatches fitted where technical components are installed which causes a possible danger to passengers using the escape hatches (e.g. high voltage systems, systems containing dangerous liquids and/or gas, etc.).

*Paragraph 7.6.2.6. (new)*

Self-explanatory wording improvement.

*Paragraph 7.6.3.1.2.*

The informal group was keen to revise the minimum dimensions of the emergency doors in order to align them with the evolution of the technology and with the corpulence of average users (elderly people, etc.).

In this view, the experts found appropriate to take over the dimensions corresponding to the 50<sup>th</sup> percentile male anthropologic dimensions per HFDS 2003 (amended in October 2009) Chapter 14 "Anthropometry and biomechanics" (Human Factors Design Standard of the US Federal Aviation Association - <http://hf.tc.faa.gov/hfds/> - see also document SDWEE-07-06).

This choice was considered consistent with the height of the passenger compartment gauges which currently are stopped at the door (1,400 mm height).

*Paragraph 7.6.3.1.4.*

EURO VI Class II and III vehicle rear end space demand makes it technically challenging to go beyond the current 350 x 1,550 mm requirement; as a consequence the informal group proposes not to amend the provisions of paragraphs 7.6.3.1.3. and 4.

*Paragraph 7.6.3.1.5.*

Increasing the required dimensions of the escape hatches is considered an improvement of the level of safety. The proposal increases the surface of the hatch by 12.5 per cent in order to take into account the situations in the real world, i.e. the occupants wearing winter clothes, elderly people, etc. With the same attention given to safety, the minimum area of the rectangle to be inscribed in the hatch aperture is increased by 20 per cent.

However, it was decided not to increase the dimensions of the exits on the sides of the vehicles:

- (a) Space on the top is limited, while the currently required dimensions for the side exits are already considered sufficient.
- (b) The size of the hatches was also increased as an answer to the request from the rescue services (German, BASt research) to pass injured passengers through the hatches.
- (c) Usually, most of the time when the vehicle is standing on its wheels in case of emergency, the service doors are used for egress, rather than the side emergency exits.

*Paragraph 7.6.4.*

The technical requirements of the service doors are considered out of the scope of the SDWEE informal group, except for the addition of provisions relating to overnight locking systems (paragraphs 7.6.4.11. and following).

*Paragraph 7.6.4.11. to 7.6.4.11.2.*

See justifications to the new paragraph 2.41. (definition of "overnight locking system")

*Paragraph 7.6.7.2.*

The current paragraph 7.6.7.2 permits that emergency doors are power-operated provided that they meet certain provisions. One of these provisions suggests that there must be an emergency device for opening the emergency door. However, the current wording refers to one of the devices prescribed in paragraph 7.6.5.1., being the emergency devices for the power operated service doors. This could bring to the (wrong) conclusion that a power-operated emergency door can only be opened by the emergency device for service door(s). The proposed wording clarifies that either such a control or a control for the dedicated emergency door can be used to operate the door.

*Paragraph 7.6.7.7.*

See justifications to paragraph 2.41 (overnight locking system).

*Paragraph 7.6.8.7.*

Most manufacturers place anti-vandalism film inside the vehicle, even before type approval. This item is also checked at PTI stations, where the operator becomes responsible. Some Contracting Parties require the manufacturer to show that the behaviour of the window is not negatively affected by the film, according to UN Regulations Nos. 107 and 43.

*Paragraph 7.6.11.*

The paragraphs 7.6.11.1. to 7.6.11.4. replaced by the new paragraphs 7.6.11.1. to 7.6.11.7.

*Paragraph 7.6.11.1.*

The informal group believes that such harmonization is the correct approach for safety. This amendment however justifies the proposed transitional provisions.



*Paragraph 7.6.11.2.*

The informal group agreed to favour pictograms in all cases, with supplementary explanatory wording when necessary.

*Paragraphs 7.6.11.2.1. to 7.6.11.2.4.*

The informal group supported the mandatory indication of a movement where appropriate and the harmonization of the safety signs structure.

*Paragraph 7.6.11.2.5.*

Minimum requirements for signage format for improved readability. Upper case words are more difficult to read than lower case words.

*Paragraph 7.6.11.3.*

While the proposed requirement for "photo-luminescent" signs could preclude other systems, the informal group found the benefits in terms of safety more important.

*Paragraph 7.6.11.4.*

The informal group proposes this wording as a solution to the challenge offered to the operators to make the safety signs visible while in the same time equipping the vehicles with blinds and curtains.

*Paragraphs 7.6.11.5. to 7.6.11.7.*

The informal group believes that such harmonization improves the general safety in an emergency situation.

*Paragraph 7.7.3.2.*

This item addresses the case which led to the creation of the SDWEE informal group. It was found important for safety reasons that the way of egress through an emergency window situated in the rear face of the vehicle remains free of obstacle. Some improvement in the wording was considered important in order to avoid that this provision jeopardises the safety improvement provided by other components like seat belts, headrests, seatbacks, etc. In this view, the experts agreed that some movement of such features should be permitted under the condition that it does obstruct the egress of the passengers in case of emergency.

*Paragraph 7.7.4.1. (former)*

Reports on bus accidents have shown that the emergency hatches in the roof are only used when the bus or coach has tipped over. While the bus or coach is in the driving position, the emergency hatches are not used by the passengers in the case of emergency.

Therefore it is justifiable that no exit support is required. Figure 26 of Annex 4, to which these paragraphs refer, should be deleted as well.

*Paragraph 7.8.3.*

The informal group agreed that some safety improvement could be achieved in the medium term by regulating emergency lighting. Requirements for emergency lighting are derived from the application in the United Kingdom of EN 13272 (Railway applications - Electrical lighting for rolling stock in public transport systems).

**Annex 4***Figure 26:*

Figure 26 is deleted as a consequence of the deletion of paragraph 7.7.4.1.2.: emergency hatches in the roof are only used when the bus or coach has tipped.

**Annex 7**

*Paragraph 1.1.*

Increasing the escape hatch dimensions improves the capacity of the occupants to egress in case of emergency. See also justifications to paragraph 7.6.3.1.5.

*Paragraph 1.2.*

The provisions of this paragraph are transferred to paragraph 7.6.2.2.

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